CCD-V110

SERVICE MANUAL

US Model
Canadian Model

October, 1986

Video 8

SPECIFICATIONS

System

Video recording system	Rotary two heads, Helical scanning FM system
Audio recording system	Rotary head, FM system
Video signal	NTSC color, EIA standards
Usable cassette	8mm video format cassette
Tape speed	SP: Approx. 1.43 cm/sec. LP: Approx. 0.72 cm/sec. (playback only)
Recording or playback time	LP: 120 min. (P6–120)
Fast forward time	Approx. 4 min. (P6-90)
Image device	CCD (Charge Coupled Device)
Viewfinder	Electric viewfinder (0.7″ black and white)
Lens	Combined 6 × power zoom lens, variable zooming speed (approx. 5 to 15 sec.) f = 12–72 mm, F1.4 with macro Filter diameter: 52 mm
Auto focus system	TCL
Color temperature	Preset values: ☀ 5,800 K 💡 3,200 K Auto: From the light at a tungsten lamp to the light on a slightly overcast day.
Minimum illumination	15 lux (F1.4), SENS at HIGH (1.4 footcandles)
Illumination range	15 lux–100,000 lux (1.4–9,294 footcandles)
Recommended illumination	More than 300 lux (28 footcandles)
Aperture correction	Automatic, manual (variable)

Input and output connector

MULTI CONNECTOR	24-pin Video input: 1 Vp-p, 75 ohms unbalanced, sync negative Video output: 1 Vp-p, 75 ohms unbalanced, sync negative Audio input: −10 dBs, input impedance more than 47 kilohms Audio output: −10 dBs, at output impedance less than 2.2 kilohm
Accessory jacks	Video input: miniphono, 1 Vp-p, 75 ohms unbalanced, sync negative Video output: miniphono, 1 Vp-p, 75 ohms unbalanced, sync negative
Earphone jack	Minijack, 8-ohm impedance
Remote connector	5-pin connector
MIC jack	Minijack, −66 dBs, low impedance With 2.5–3 V DC output, impedance 6.8 kilohms
Microphone power output jack	Special minijack, 5 V DC

– Continued on next page –

8 VIDEO CAMERA RECORDER

SONY®

MICROFILM

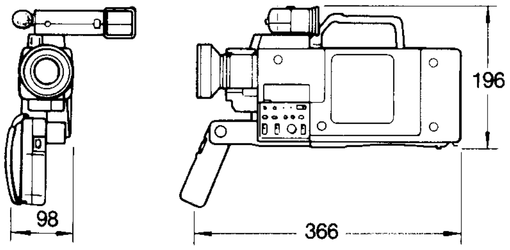
VIDEO

Display in the viewfinder

Mode and caution indication	Small 14 characters × 2 lines
Main title indication	Large 10 characters × 2 lines, 7 colors selectable
Sub title indication	Small, 6 + 8 characters, 7 colors selectable
Date or time indication	Small 8 characters Date: From Jan. 1, 1986 to Dec. 31, 2015 Time: 12 hour cycle
Clock	Cristal lock
Memory back-up	Approx. 2 years using the CR2025 lithium battery

General

Power requirements	MULTI CONNECTOR 8.5 V Battery compartment 6 V/8.5 V
Power consumption	6.8W (camera recording) including the viewfinder
Installation	Horizontally, vertically
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Dimensions	Approx. 98 × 196 × 366 mm (w/h/d) ($3\frac{7}{8} \times 7\frac{3}{4} \times 14\frac{1}{2}$ in.)



Weight	Approx. 2.3 kg (5 lb 1 oz) excluding the battery and cassette Approx. 2.6 kg (5 lb 13 oz) including the battery and cassette
Microphone	Electret condenser microphone, uni-directional monaural type

Accessories supplied

- Shoulder strap (1)
- Sticker (1)
- Lithium battery (1)

Optional accessories

Tuner timer unit TT-V8U, AC power adaptor AC-V8UC, Battery pack NP-22, NP-4000, Battery belt BP-400, DC pack DCP-80, Car battery cord DCC-16AW, External microphone shoe SAD-100, Remote Commander RM-84, Cable VMC-607M (2 phono to 2 phono), VMC-609MS (2 phono to 3 phono), AVM-T515V (miniphono to 2 phono)

Design and specifications are subject to change without notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION AU COMPOSANT AYANT RAPPORT A LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DU CIRCUIT QUI SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNMENT SONT IDENTIFIÉS DANS CE MANUEL. SUIVRE LES PROCÉDURES QUAND LES COMPOSANTS CRITIQUES SONT REMPLACÉS OU LE FONCTIONNEMENT IMPROPRE EST SUSPECTÉ.

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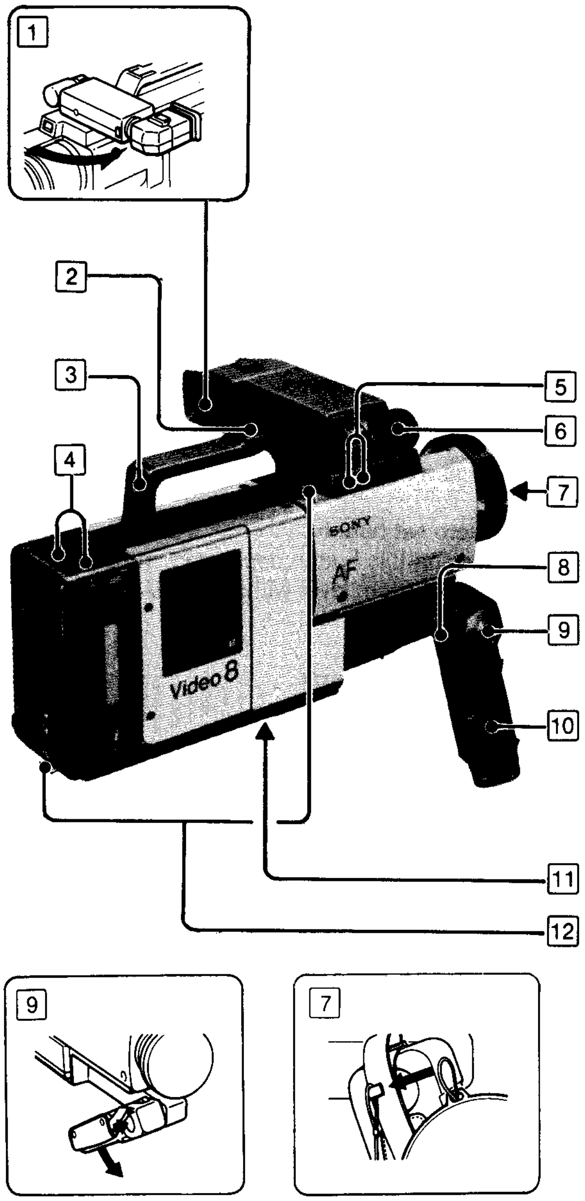
SECTION 1
GENERAL

1-1. LOCATION AND FUNCTION OF PARTS AND CONTROLS

A-1



For details on the use of each control, refer to the pages indicated in the brackets.

Video camera section

A-1

1 **Viewfinder**
The picture being recorded or played back can be monitored in monochrome through this viewfinder. Data such as the tape counter, function mode, caution indicators, recording title, date, time, are also displayed on the viewfinder screen.

2 **Accessory shoe**
Attach an optional external microphone, video light, etc.

3 **Handle**

4 **Battery compartment and battery eject switch**
Insert a battery pack, AC pack or DC pack.

5 **MIC jack and DC OUT (microphone power output) jack**
Connect an external microphone.
The MIC jack accepts Sony "plug-in-power" microphones.

6 **Built-in microphone**

7 **Lens cap**

8 **Power zoom button**
Press for smooth power zooming between wide-angle (W) and telephoto (T) positions.

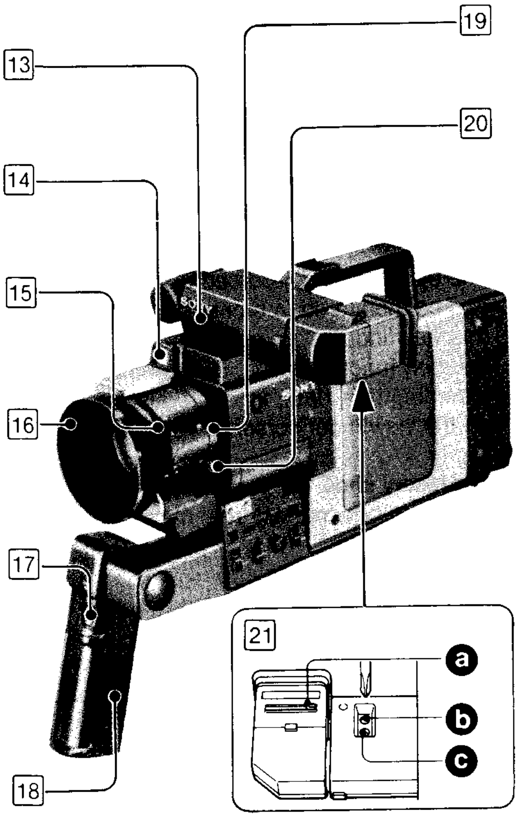
9 **Release button** [p.14]
Press to unlock the hand grip when adjusting the grip position.

10 **Hand grip and grip strap** [p.13]

11 **Tripod receptacle**
Attach an optional tripod.

12 **Hooks for shoulder strap** [p.14]

A-2



A-2

13 Camera recording/battery lamp
Lights during camera recording. It blinks when the battery is exhausted.

14 White balance sensor
This is the sensor for the auto white balance adjustment. Be careful not to cover it.

15 Focus ring [p.18]
For manual focusing, turn this ring to focus while looking through the viewfinder.
This ring will be turned automatically during auto focusing.

16 Lens hood
Normally keep it attached. When attaching an optional filter or special lens or for macro shooting, turn it counterclockwise to remove.

17 START/STOP button
Press to start or stop camera recording.

18 Lithium battery compartment [p.12]

19 Macro set button
Keeping this button depressed, move the manual zoom lever within the MACRO range for close-ups.

20 Manual zoom lever

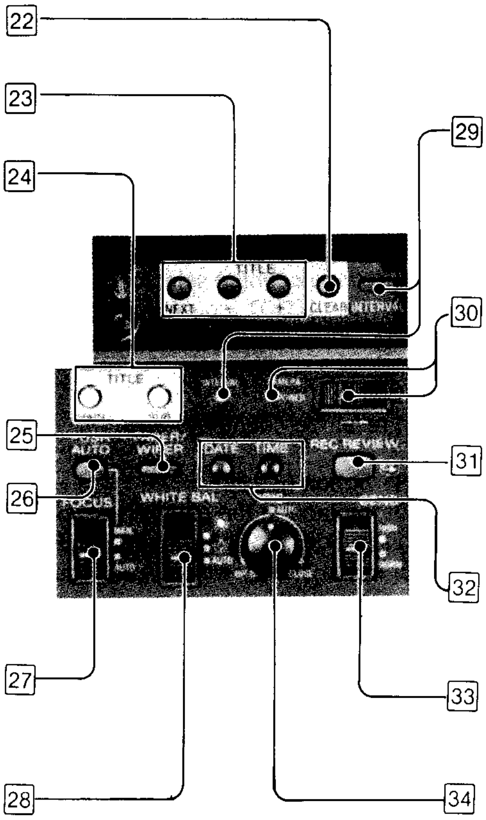
21 Bottom of the viewfinder

ⓐ **Viewfinder lens adjustment lever** [p.13]
Adjust to your eyesight to assure good focus. Be sure to adjust this knob when shooting for the first time.

ⓑ **Focus control screw**

ⓒ **Brightness control screw**
Normally, there is no need to adjust these screws. Adjust only when the picture is not displayed clearly.

A-3



A-3

22 **CLEAR button [p.27]**
Press to clear the preset main or sub title.

23 **TITLE +/− buttons and NEXT button [p.23, p.24, p.27]**
Used to set the color and characters of the title, date, time, and color of the wiper.

24 **TITLE MAIN and SUB buttons [p.27]**
Press to display or turn off the main and sub titles.
Keep the button depressed for more than 3 seconds to enter title setting mode.

25 **FADER/WIPER button [p.22, 23]**
Press to select the fader, wiper or normal mode. Keep the button depressed for more than 3 seconds to enter wiper color setting mode.

26 **PUSH AUTO button [p.18]**
Keep it depressed to activate the auto focusing if in the manual focusing mode.

27 **FOCUS switch [p.18]**
Normally set to AUTO for the auto focusing. To focus manually, set to MAN (manual).

28 **WHITE BAL (white balance) switch [p.20]**
Normally set to AUTO for the auto white balance adjustment. Set it to ☀ (outdoors) or ✧ (indoors) according to lighting conditions.

29 **INTERVAL recording button and lamp [p.21]**
Press to activate the automatic interval recording function. The lamp lights during interval recording.

30 **CAMERA POWER switch and lamp [p.13]**
Slide to the right to turn on the camera section. The lamp lights up. Slide again to turn it off.

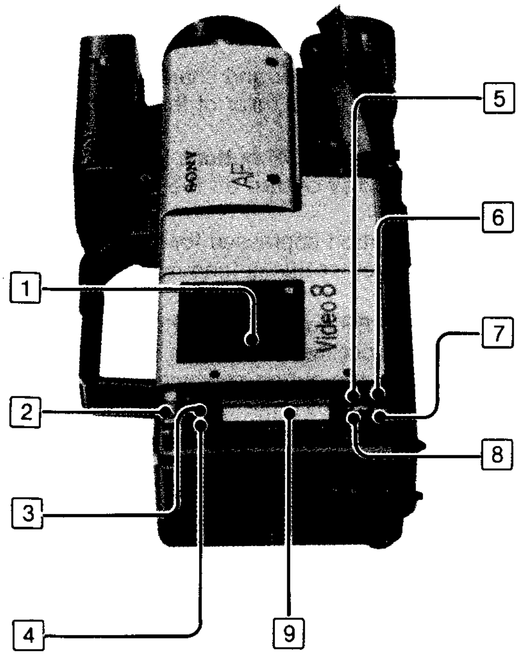
31 **REC REVIEW (recording review) button [p.16]**
Press to play back the end of the previously recorded part for several seconds.

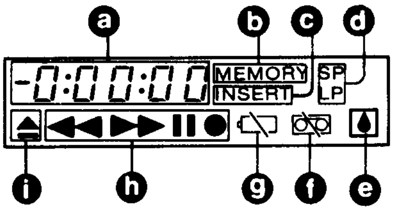
32 **DATE and TIME buttons [p.24]**
Press to display or turn off the date or time.
Keep these buttons depressed simultaneously for more than 3 seconds to enter date and time setting mode.

33 **SENS (sensitivity) selector [p.21]**
Normally set to NORM (normal).

34 **IRIS control [p.21]**
Normally set to AUTO.

A-4





Video cassette recorder section

A-4

[1] Cassette compartment

[2] ⏏ (cassette eject) switch

[3] VTR POWER switch and lamp
Press to turn on the recorder section. The lamp lights up. Press the switch again to turn it off.

[4] COUNTER (tape counter) selector [p.29]
Set to "1" for "0:00:00" counter. Set to "2" for "0000" counter.

[5] RESET button
Press to reset the counter to zero.

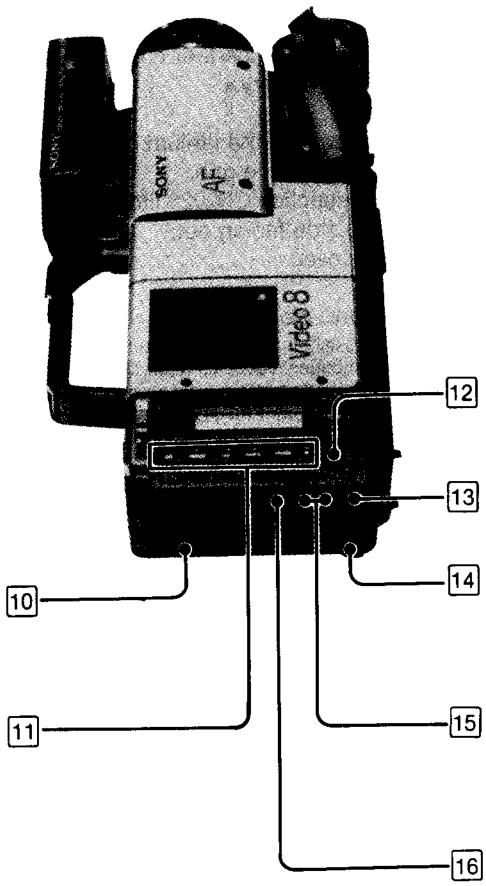
[6] MEMORY button [p.29]
To return the tape to the counter zero point, press this button to display the MEMORY indicator in the display window, and press the ▶▶ or ◀◀ button.

[7] INSERT button [p.30]
Press to insert a new picture and sound onto a previously recorded tape.

[8] EDIT switch
Normally keep this switch at the left position. When editing a tape, set to EDIT.

[9] Display window
ⓐ Tape counter
ⓑ MEMORY indicator
ⓒ INSERT indicator
ⓓ Tape speed indicator
ⓔ Blinks when moisture has condensed inside the unit.
ⓕ Lights steadily when no cassette is inserted. Blinks when the tape approaches its end.
ⓖ Blinks when the battery is weak.
ⓗ Tape operation mode indicators
ⓘ Blinks when moisture has condensed on the tape, when the tape approaches its end during camera recording or when the tape does not run normally.
Lights steadily when the cassette is being unloaded.

A-5



A-5

10 **MULTI CONNECTOR**
Connect an RFU adaptor, AC power adaptor or tuner timer unit.

11 **Tape transport buttons**
◀◀ (rewind), ▶ (playback), ▶▶ (fast-forward), ■ (stop), ❚❚ (pause), ❚❚▶ FRAME (frame-by-frame playback)

12 **REC (recording) switch**
Slide to the right to start recording.

13 ◎ **(earphone) jack** (mini)

14 **REMOTE connector** (5-pin)
Connect an optional Remote Commander, editing controller, etc.

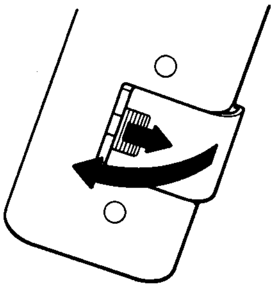
15 **ACCESSORY IN/OUT jacks** (miniphono)
Connect an optional color corrector, etc.

16 **SHARPNESS control**
Normally set to the center detent position.

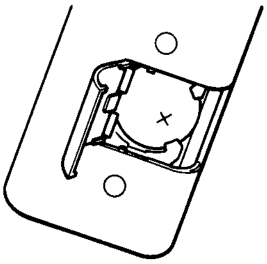
1-2. LITHIUM BATTERY

B-8

1



2



B-8

This unit uses a lithium battery to activate the clock and to keep the titles in memory. Before operating the unit for the first time, install the supplied lithium battery.

1 Open the cover of the lithium battery compartment on the grip.
2 Install the supplied CR2025 lithium battery with the ⊕ side facing out.
3 Close the cover.

LITHIUM BATTERY LIFE

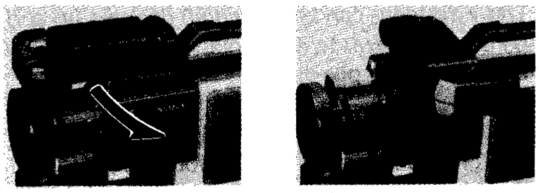
Approximately 2 years in normal operation.
When the lithium battery becomes weak, the time indication will blink on the viewfinder screen for several seconds immediately after the CAMERA POWER switch is turned on.

NOTES ON LITHIUM BATTERY

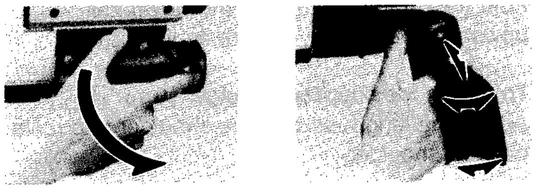
- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery nor throw it into a fire, which might cause it to explode. Carefully dispose of the used batteries.

1-3. PREPARATIONS FOR CAMERA RECORDING

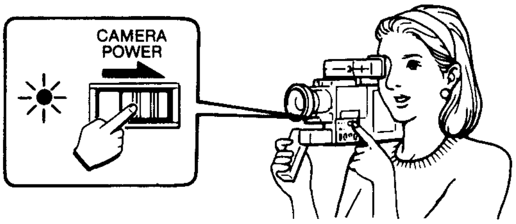
D-1



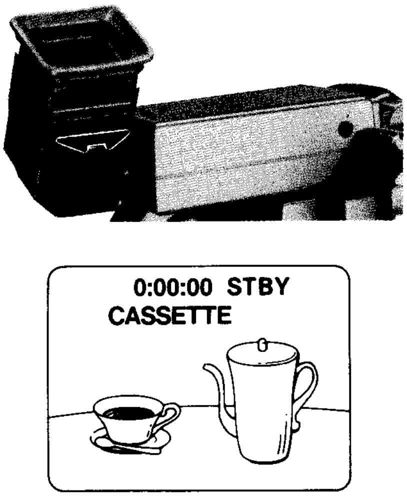
D-2



D-3



D-4



1 Set the viewfinder. D-1

Turn the viewfinder until it locks (90 degrees).

2 Set the grip. D-2

❶ Pressing the release button, turn the grip until it locks.
❷ Hold the grip so that your thumb and forefinger can minipulate the power zoom button and the START/STOP button respectively.
❸ Adjust the length of the grip strap.

3 Slide the CAMERA POWER switch to the right. D-3

4 Position the video camera recorder. D-3

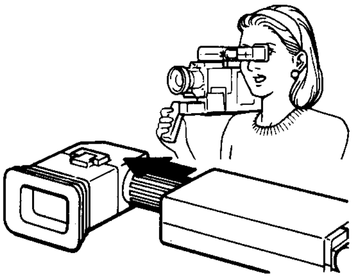
Remove the lens cap.
For stable shooting, rest the unit on your shoulder while holding the upper arm firmly against your body.

5 Adjust the position of the viewfinder lens. D-4

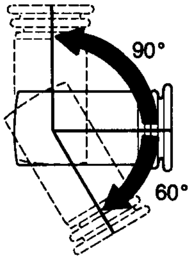
This adjustment is necessary only when you use the camera for the first time or after another person has used it, because the distance of optimum vision varies from person to person.

Turn the viewfinder upward and adjust the viewfinder lens adjustment lever so that the indications displayed on the viewfinder screen come into sharp focus.

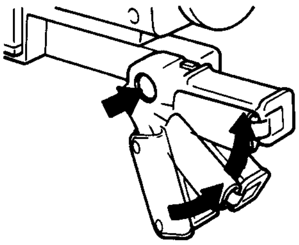
D-5



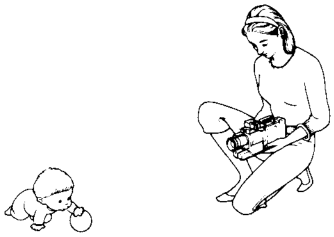
D-6



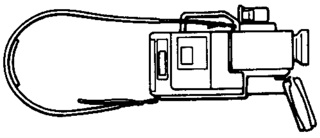
D-7



D-8



D-9



To view with you left eye D-5
Pull out the viewfinder until it locks.

To change the angle of the viewfinder D-6
The viewfinder can be turned 90 degrees up and 60 degrees down to make high-angle or low-angle shooting possible.

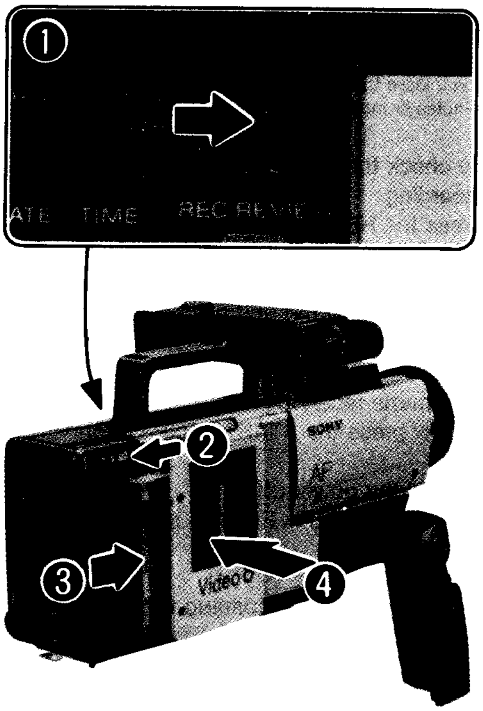
To change the angle of the grip D-7
The grip can be set to one of four positions. Pressing the release button, turn the grip until it locks at the desired position.

When shooting from a low angle D-8
Fold the grip in place, turn the viewfinder upward and hold the camera as illustrated.

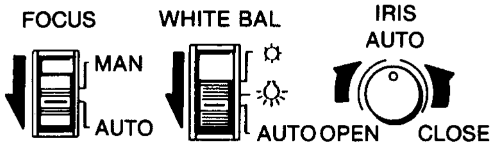
To attach the supplied shoulder strap D-9
Adjust the length so that the shoulder pad rests on your shoulder.

1-4. EASY CAMERA RECORDING WITH AUTOMATIC ADJUSTMENT

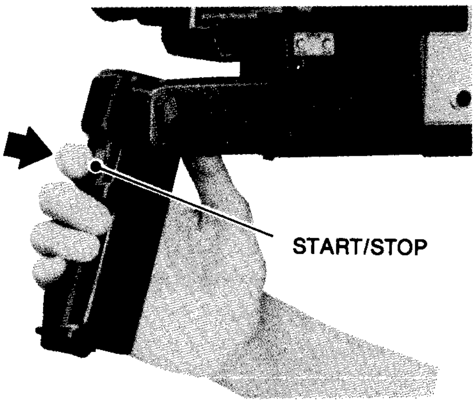
E-1



E-2



E-3



OPERATION

1. **Slide the CAMERA POWER switch to the right (to set to CAMERA mode) and insert a cassette.** E-1

2. **Set the following selectors to the standard position (green position) for automatic adjustments.** E-2

   FOCUS → AUTO (auto focusing)
   WHITE BAL → AUTO (linear auto white balance)
   IRIS → AUTO (auto iris)

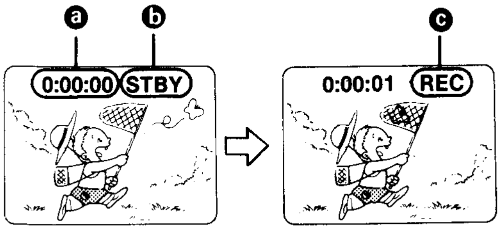
3. **Position the camera and press the START/STOP button.** E-3

   The subject seen through the viewfinder and the sound picked up through the microphone can be recorded.

4. **To stop recording, press the START/STOP button.**

   The unit will enter recording pause mode.

E-4



Check on the viewfinder screen E-4

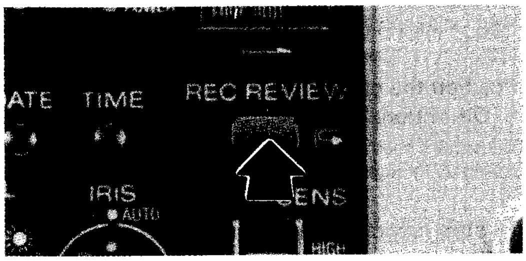
ⓐ Tape counter

ⓑ STBY: Displayed during recording pause mode.

ⓒ REC: Displayed during recording.

If you leave the unit in the recording pause mode for 7 minutes or more, the power will be automatically turned off.

E-5



To check the last scene of the previous recording

Press the REC REVIEW button. E-5

The last few seconds of the recorded scene are played back in reverse, and then played back normally. Then the unit will enter recording pause mode.

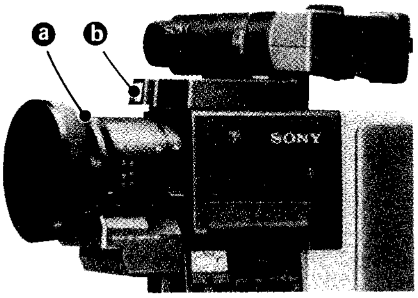
To resume recording

Simply press the START/STOP button.

To turn the power off

Slide the CAMERA POWER switch to the right again.

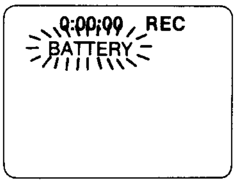
E-6



NOTES ON CAMERA RECORDING WITH AUTOMATIC ADJUSTMENT

- During camera recording, do not touch the focus ring ⓐ or cover the white balance sensor ⓑ. E-6
- If there is insufficient light and the LOW LIGHT indicator is displayed on the viewfinder screen, the auto focusing and linear auto white balance do not operate properly. Add an appropriate light.
- The camera recording with automatic adjustment may not produce optimum results under certain conditions or ambient lighting. In this case, manually adjust the focus, white balance and iris. See pages 18, 20 and 21.

E-7



CAUTION INDICATORS ON THE VIEWFINDER SCREEN E-7

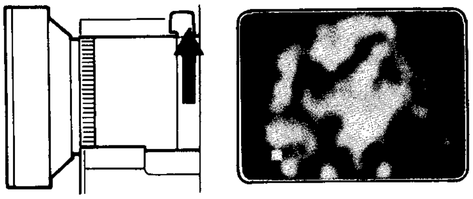
A caution indicator will be displayed below the tape counter on the viewfinder screen.

BATTERY	Blinks slowly, then rapidly.	The battery is exhausted.
TAPE END	Blinks slowly, then rapidly.	The tape approaches and then reaches its end.
CASSETTE	Blinks.	• No cassette inserted. • The safety tab is out.
LOW LIGHT	Lights.	Insufficient light
WHITE BAL	Blinks.	Auto white balance does not operate. (page 20)
DEW	Blinks.	Moisture condensation inside the unit. (page 31)
CAUTION	Blinks.	Moisture condensation on the tape surface, etc. (page 31)

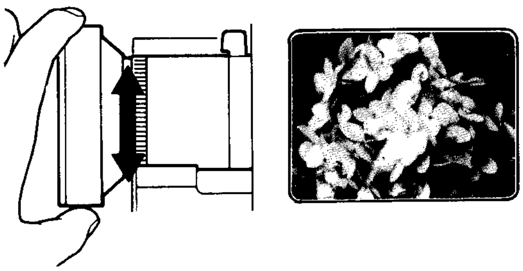
1-5. MANUAL FOCUSING

F-1

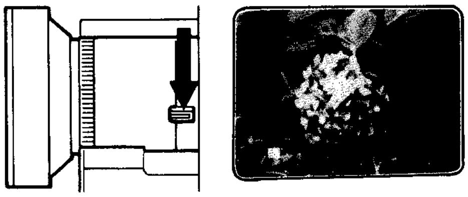
F-2



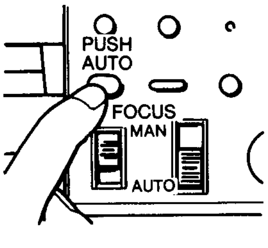
F-3



F-4



F-5



Auto focusing will be activated for almost any subject centered in the viewfinder. However, for some subjects listed on page 19, use manual focusing.

1 Set the FOCUS switch to MAN. F-1
The white mark appears at the bottom of the viewfinder screen.
2 Turn the manual zoom lever to the telephoto position (72) to make the subject as large as possible in the viewfinder. F-2
3 Turn the focus ring to achieve sharp focus. F-3
4 Set the desired shot length using the manual zoom lever. F-4

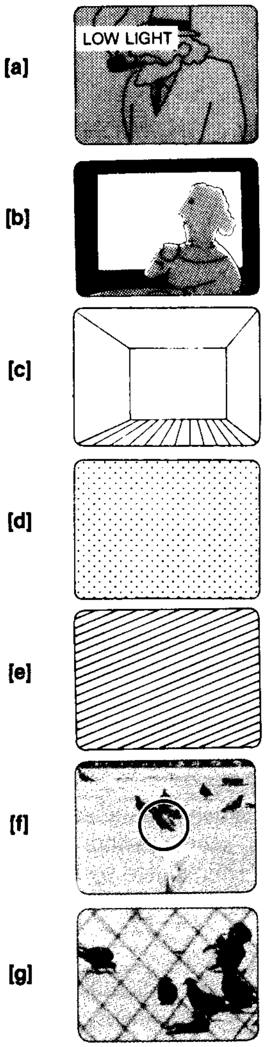
QUICK FOCUS ADJUSTMENT F-5

Press the PUSH AUTO button during recording in the manual focusing mode. Auto focusing will be activated only when the PUSH AUTO button is kept depressed.

SOME HELPFUL HINTS

- When shooting a scene with lots of movement in bright light, the subject can be kept in good focus regardless of movement by setting the zoom lever to 12 and the focus ring to 2 m.
- The figures on the focus ring indicate the distance between the subject and the ϕ mark on the side of the recorder body.
- When shooting in low lights situations, such as indoors, the depth of field for proper focus becomes very shallow. For best results, set the focus in telephoto, and shoot at wide angles.

F-6



DIFFICULT CONDITIONS FOR AUTO FOCUSING F-6

[a] Insufficient light
[b] Too much bright light behind the subject
[c] Subjects with flat colors and less contrast—wall, sky, etc.
[d] Finely detailed repetitive patterns
[e] Slant stripes
[f] When the distance between subjects at the center is extreme (e.g. one subject is close, the other is away)
[g] Subjects beyond screens, nets, etc. or when another subject passes across the camera

OTHER USES OF MANUAL FOCUSING

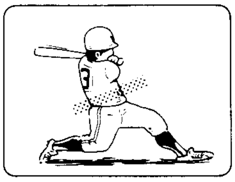
- When using special effects lenses or filters
- When shooting still subjects on a tripod
- To save battery wear
  (When the FOCUS switch is set to AUTO, the auto focusing operates to move the focus ring automatically even in recording pause mode. This causes the battery to wear continuously.)

For focusing in close-up shooting.

TCL AUTO FOCUSING SYSTEM
The TCL (Through Camera Lens) auto focusing system incorporated in this unit utilizes high-precision sensors to determine picture contrast at the center of the viewfinder screen and adjust focus accordingly for automatic, highly accurate focusing. F-7

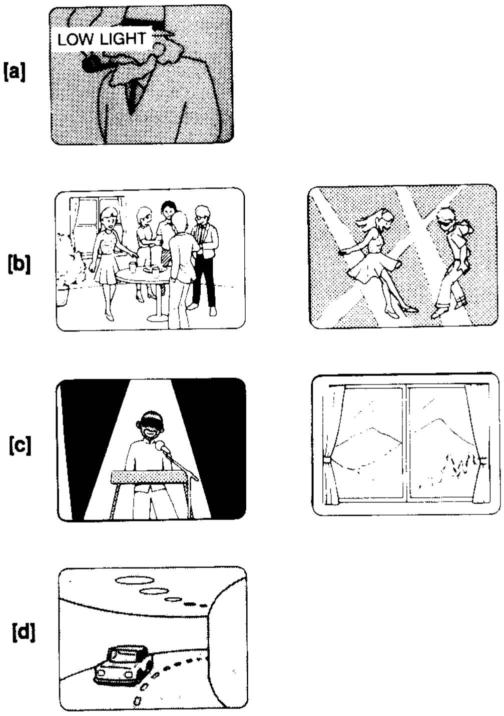
Note
It may take several seconds to get focus when the camera is rapidly panned from a near subject to a distant subject with less contrast.

F-7

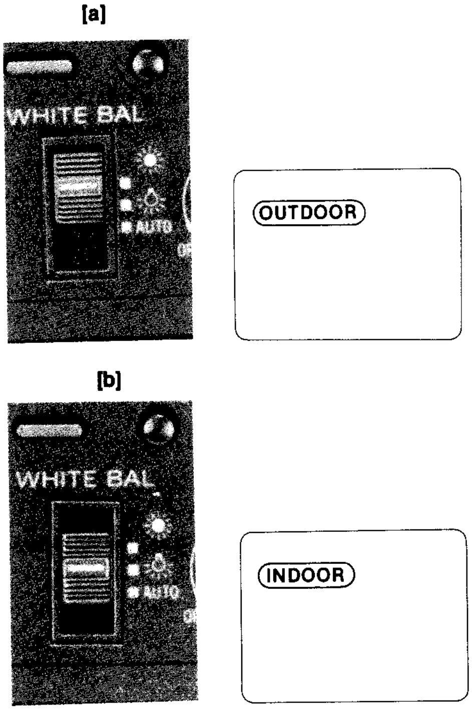


1-6. WHITE BALANCE

G-1



G-2



In most cases, the linear auto white balance function of this unit adjusts the white balance automatically. However, if it does not work correctly in the conditions listed below, set the WHITE BAL selector to ☀ or 💡 according to the lighting condition.

DIFFICULT CONDITIONS FOR LINEAR AUTO WHITE BALANCE G-1

[a] Insufficient light
[b] When lighting conditions change quickly
[c] When the light source for the subject is different from that illuminating this unit ex. when the subject is in a spotlight, or when the subject is outdoors but the camera is indoors, etc.
[d] Special light sources such as natrium lamps, etc.

HOW TO SET THE WHITE BAL SELECTOR G-2

[a] **Recording outdoors**—Set to ☀. (5,800 K)
[b] **Recording indoors**—Set to 💡. (3,200 K)

Recommended setting for various subjects
☀ :sunset, fireworks, subjects in a sunny window, etc.
💡 :candle flames in darkness, subjects in the spotlight, scenes before sunrise, subjects in a tunnel (illuminated by natrium lamps), neons, etc.

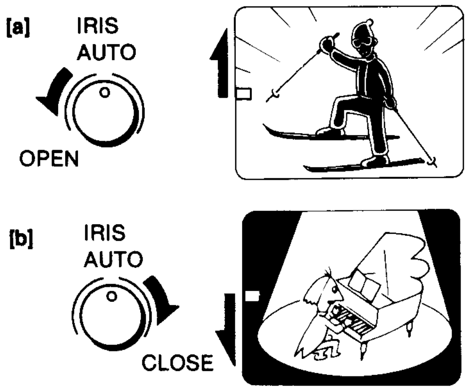
Note
If the LOW LIGHT indicator is displayed in the viewfinder, the OUTDOOR or INDOOR indicator does not appear.

WHAT IS THE WHITE BALANCE?
The color of the subject being recorded can be affected by the ambient light. White balance adjustment is necessary for compensating for this color variation, so that a white subject, for example, can be recorded white without reference to the light source.

LINEAR AUTO WHITE BALANCE SYSTEM
The auto white balance system of this unit utilizes the white balance sensor located below the built-in microphone to determine the color temperature of the ambient light and adjust the white balance accordingly. As the ambient lighting condition changes gradually, such as in twilight, the white balance will be readjusted automatically. As the sensor is built in the unit, however, optimum white balance adjustment cannot be obtained if the subject and this unit are under different lighting conditions.

1-7. IRIS AND SENSITIVITY ADJUSTMENT

H



IRIS ADJUSTMENT H

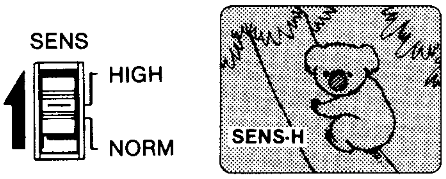
The iris is adjusted automatically with the IRIS control set to AUTO. When shooting a scene with strong contrast, adjust the IRIS control.

[a] When backlit shot results in the subject being too dark → Turn IRIS toward OPEN.
[b] When a subject is too bright against a dark background → Turn IRIS toward CLOSE.

When the IRIS control is turned, the white mark moves at the left side of the viewfinder screen.

After shooting that particular scene, reset the IRIS control to AUTO.

I

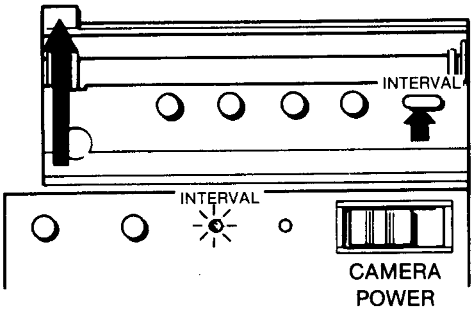


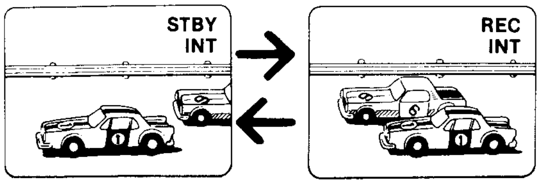
SENSITIVITY ADJUSTMENT I

When the entire scene is too dark and the subject is not clear, set the SENS selector to HIGH. The SENS H indicator appears on the viewfinder screen.
The subject can be recorded more clearly though the recorded picture may appear slightly noisy.
After shooting that paricular scene, reset the SENS selector to NORM.

1-8. AUTOMATIC INTERVAL RECORDING

L





L

A very short recording of 8 frames will be activated repeatedly at 15-second intervals, simply by pressing the INTERVAL button.

1 Slide the CAMERA POWER switch to the right to set the unit to the recording pause mode.
2 Press the INTERVAL button.
The INTERVAL lamp will light and the unit will enter the interval recording mode.

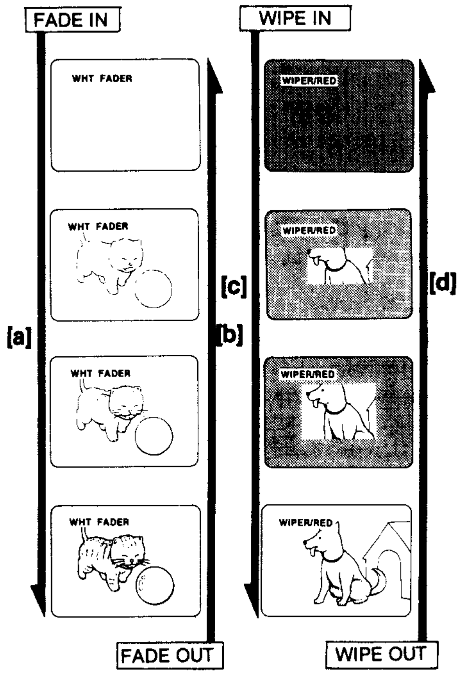
A very short recording of 8 frames will be made at 15-second intervals and the recording pause mode will resume. This procedure is repeated for approximately 30 minutes and then the unit will remain in the recording pause mode.

The pause mode will be released automatically after about 7 minutes and the unit will be turned off.

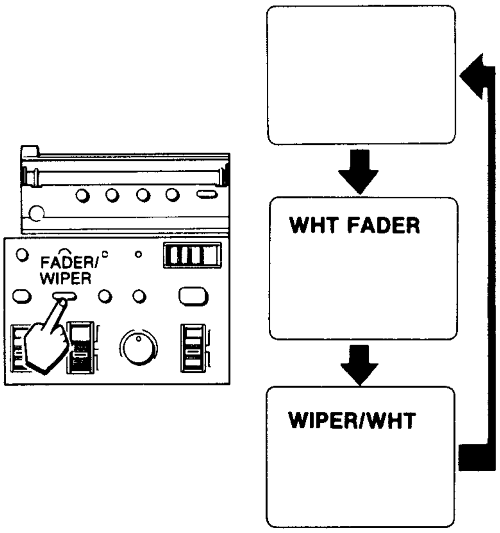
To stop the interval recording
Press the INTERVAL button to turn the INTERVAL lamp off.

1-9. FADER AND WIPER

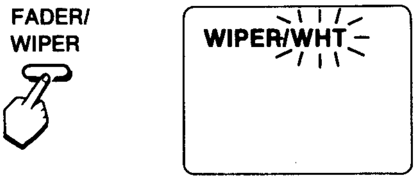
M-1



M-2



M-3



M-1

With the fader and wiper functions, you can add dramatic effects at the beginning, at the end, or in other portions of the video program you are recording.

[a] **Fade in**—the picture and sound will come gradually from a white, silent scene.
[b] **Fade out**—the picture and sound will go out gradually until a white, silent scene is reached.
[c] **Wipe in**—the picture will become visible gradually from the center of the screen and the sound volume will increase.
[d] **Wipe out**—the picture will go out of sight gradually toward the center of the screen and the sound volume will decrease.

The color of the fader is white only, while the color of the wiper can be selected among 7 colors.

How to press the FADER/WIPER button

- Each time the FADER/WIPER button is pressed momentarily, the unit will be set to the following three modes consecutively. M-2

Normal mode → FADER mode → WIPER mode

- When the FADER/WIPER button is kept pressed for more than 3 seconds in any mode, the unit will enter the wiper color setting mode. The color indicator blinks on the viewfinder screen. M-3

FADER OPERATION

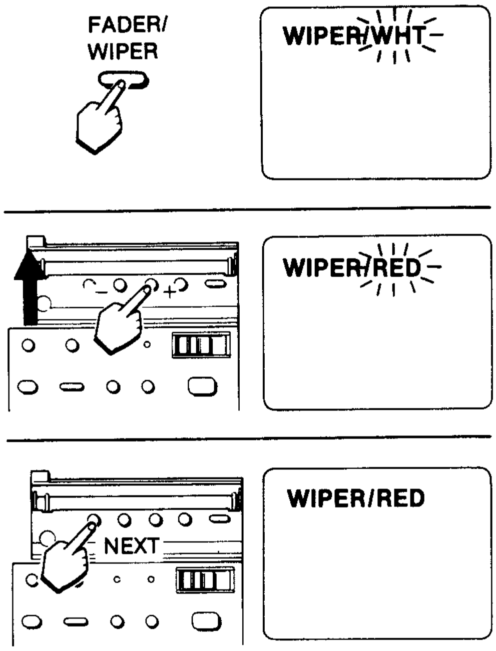
To fade in

1 Slide the CAMERA POWER switch to the right to set the unit to the recording pause mode.
2 Press the FADER/WIPER button **once** to set the unit to FADER mode.
3 Press the START/STOP button to start camera recording.

To fade out

1 During camera recording, press the FADER/WIPER button **once** to set the unit to FADER mode.
2 Press the START/STOP button to stop recording.

M-4



WIPER OPERATION

To set the color of the wiper M-4

1. Press the FADER/WIPER button **for more than 3 seconds** to set the unit to wiper color setting mode.
2. Press the + or – button repeatedly until the desired color indicator appears.

   WHT (white), BLUE, GRN (green), CYAN, RED, VIO (violet), YEL (yellow)

3. Press the NEXT button to memorize the setting.
   The color indicator lights steadily.

To wipe in

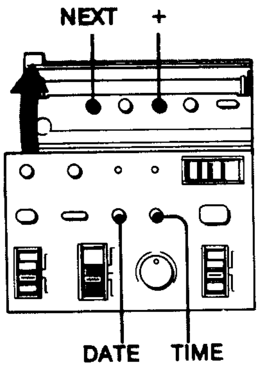
1. Slide the CAMERA POWER switch to the right to set the unit to the recording pause mode.
2. Press the FADER/WIPER button **twice** to set the unit to WIPER mode.
3. Press the START/STOP button to start camera recording.

To wipe out

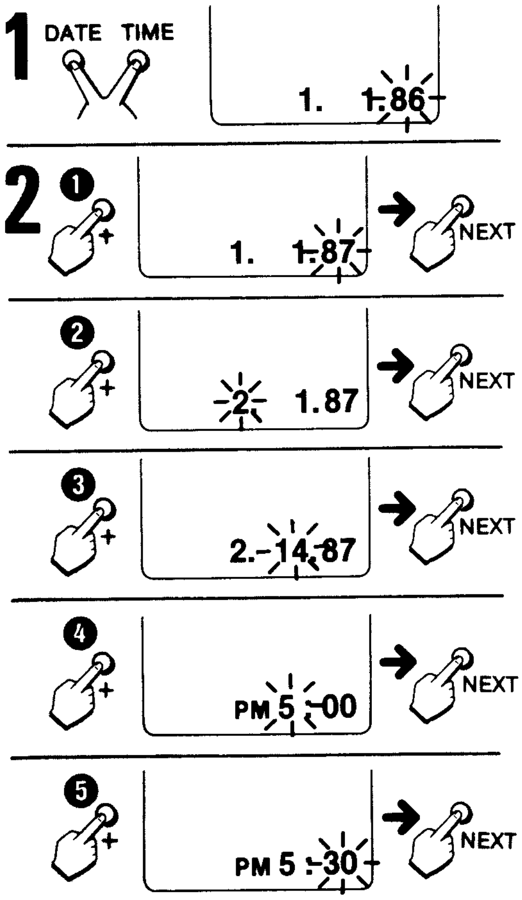
1. During camera recording, press the FADER/WIPER button **twice** to set the unit to WIPER mode.
2. Press the START/STOP button to stop recording.

1-10. RECORDING DATE OR TIME

N-1



N-2



Once the date and the current time are adjusted, the date or time can be recorded together with the picture.

Before setting the date and time

- Make sure that the lithium battery is installed. See page 12.
- Slide the CAMERA POWER switch to the right to set the unit to CAMERA mode. (If a cassette is inserted, the power will be turned off automatically in 7 minutes.)

DATE/TIME SETTING N-1

1 Press the DATE and TIME buttons simultaneously **for more than 3 seconds.** The date indication will appear on the viewfinder screen (date/time setting mode).

2 Adjust the year, month, day, hour and minute in sequence, following the illustration N-2. First adjust the blinking digits with the + button, and then press the NEXT button.

❶ Year: 86 = 1986, 00 = 2000
❷ Month
❸ Day
❹ Hour: AM12:00 = midnight, PM12:00 = noon
❺ Minute

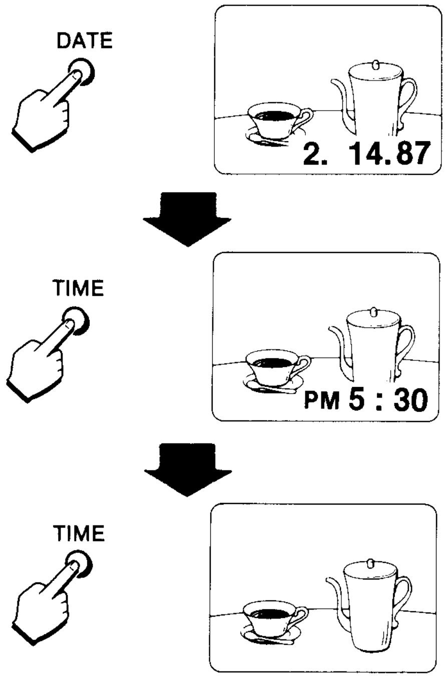
After adjusting the minute digits, press the NEXT button at the same time with an announced time signal.

The time indication disappears and the clock starts operating. There is no need to readjust the date and time as long as the lithium battery remains.

THE + BUTTON CAN BE PRESSED IN TWO WAYS:

- When you keep the button pressed, the digits will advance continuously.
- When you press and immediately release the button, the digits will advance by one.

N-3



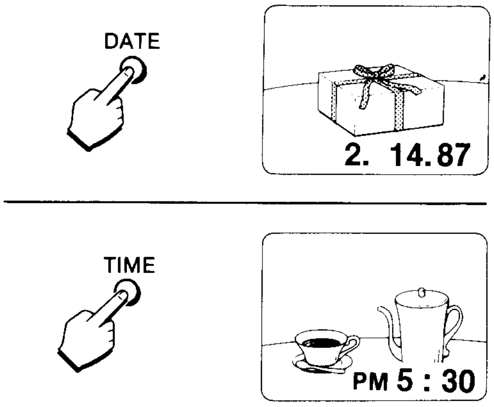
To check the preset date and time N-3

1 Press the DATE button to display the date.
2 Press the TIME button to display the time.
3 Press the TIME button. The time indication goes off.

To readjust an incorrect date or time

Set the unit to date/time setting mode and press the NEXT button repeatedly until the incorrect digit blinks. Correct it with the + button and press the NEXT button until the time indication disappears.

N-4



TO RECORD THE DATE OR TIME N-4

During camera recording or in recording pause mode, press the DATE or TIME button to display the date or time on the viewfinder screen.
If the unit is set to recording mode, the date or time being displayed will be recorded together with the picture.

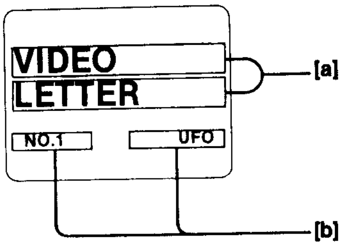
To stop recording the date or time, press the DATE or TIME button again. The picture recording will continue.

Note

The date or time can be recorded only during a camera recording. To insert the date or time while editing a tape, see "INSERT RECORDING" on page 30.

1-11. RECORDING A TITLE

O-1



A main title and a sub title can be created and recorded together with the picture.

O-1

[a] **Main title:** 10 characters × 2 lines, displayed in large characters

[b] **Sub title:** 6 + 8 characters, displayed in small characters

- Selectable colors:

  WHT (white), BLUE, GRN (green), CYAN, RED, VIO (violet), YEL (yellow)

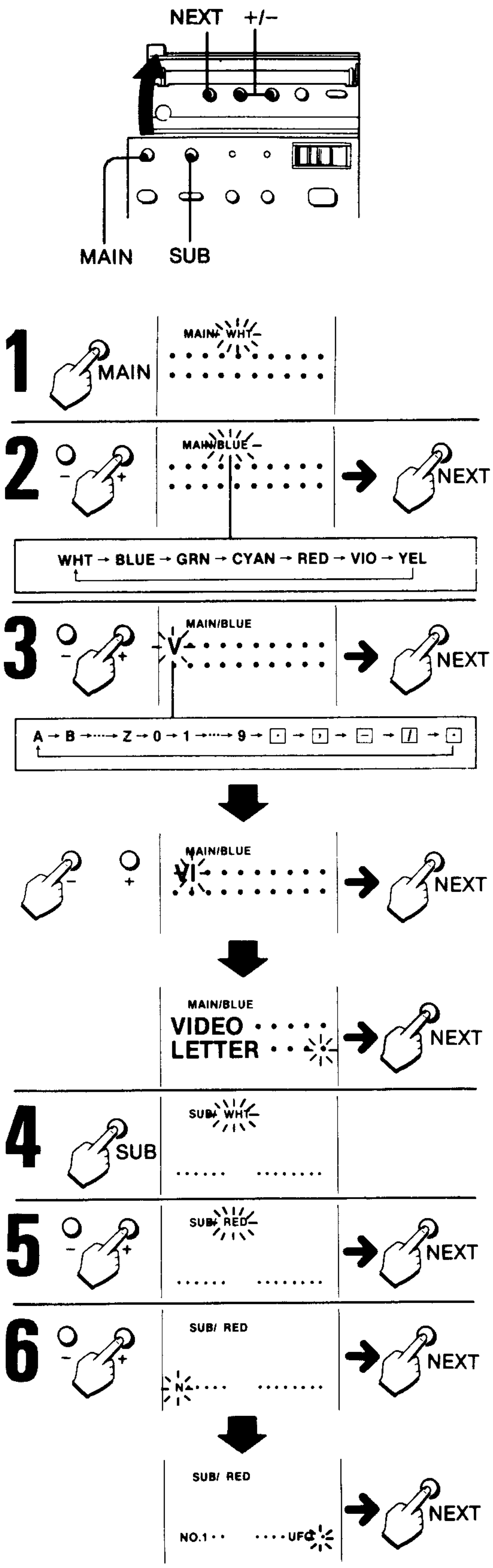
- Selectable characters:

  alphabet, numerals, 4 symbols (period, apostrophe, hyphen and slash), space

Before setting the titles

- Make sure that the lithium battery is installed. See page 12.
- Slide the CAMERA POWER switch to the right to set the unit to CAMERA mode.
  (If a cassette is inserted, the power will be turned off automatically in 7 minutes.)
- Lift up the viewfinder lens for easier viewing.

O-2



TITLE SETTING O-2

1 Press the MAIN button **for more than 3 seconds.**
The MAIN title will appear on the viewfinder screen and the color indicator will blink (main title setting mode).
2 Set the color with the +/– buttons, and then press the NEXT button.
3 Set the characters one by one, with the +/– buttons and the NEXT button.*

When the last character is set, the main title will be memorized and disappear from the screen.

4 Press the SUB button **for more than 3 seconds.**
The SUB title will appear and the color indicator will blink (sub title setting mode).
5 Set the color with the +/– buttons, and then press the NEXT button.
6 Set the characters one by one, with the +/– buttons and the NEXT button.*

When the last character is set, the sub title will be memorized and disappear from the screen.

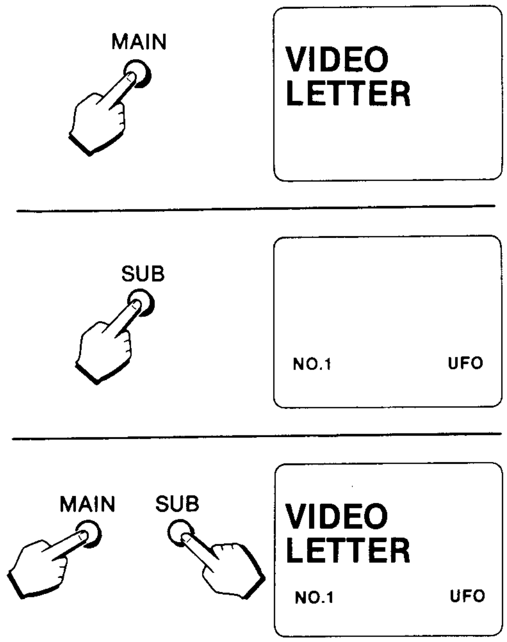
*To set a space, press the NEXT button without pressing the +/– buttons. The dot remains displayed during setting.

To check the title
To check the main title, press the MAIN button. To check the sub title, press the SUB button. To turn off the title, press the same button again.

To clear the title
Set the unit to the main or sub title setting mode and press the CLEAR button.

To change a part of the title
Set the unit to the main or sub title setting mode and press the NEXT button repeatedly until the desired character blinks. Change it with the +/– buttons and press the NEXT button until the title disappears.

O-3



TO RECORD THE TITLE O-3

During camera recording or in recording pause mode, press the MAIN button and/or SUB button to display the main title and/or sub title.
If the unit is set to recording mode, the title(s) will be recorded together with the picture.

To stop recording the title(s), press the MAIN button and/or SUB button. The picture recording will continue.

Note
The title can be recorded only during a camera recording. To insert a title while editing a tape, see "INSERT RECORDING" on page 30.

When recording the title in fader or wiper mode
In fader mode, the title will appear and disappear with the picture fade-in and fade-out. In wiper mode, the title remains displayed while the picture is wiped in and wiped out.

- The color of the title characters may be blurred or shifted when the tape is played back.
- Check the combination of the colors of the title and the wiper on the monitor screen.

1-12. FRAME RECORDING

A very short recording of 8 frames can be activated manually for creating an animated program of your own.

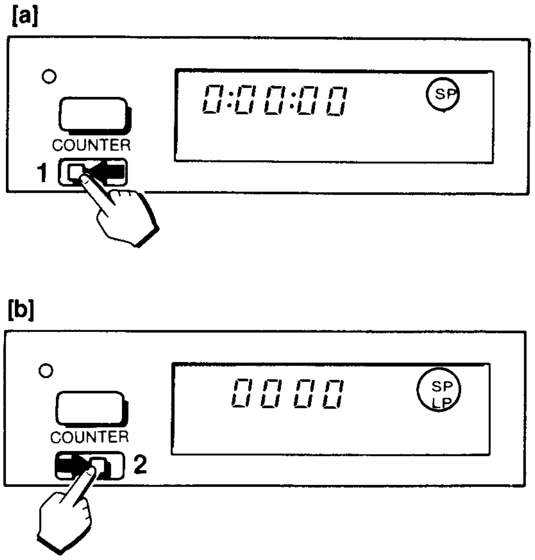
1 Press the VTR POWER switch and then slide the CAMERA POWER switch. The unit is set to recording pause mode.
2 Slide the REC switch to the right.
A recording of 8 frames will be made and the recording pause mode will resume.
3 Move the object a little and repeat step 2 as many times as you like.

When the recording pause mode lasts for more than approximately 7 minutes, the pause mode will be automatically released and the unit will be set in the stop mode.

TO RECORD FROM A VCR
Make the necessary connections as described in editing from another VCR and press the VTR POWER switch. Set the video camera recorder to recording pause mode and proceed to steps 2 and 3 above.

1-13. USE OF THE TAPE COUNTER

T-1



TO SELECT THE COUNTER MODE T-1

Select one of the two counter modes with the COUNTER selector.

Counter 1 (0:00:00 mode) **[a]**
When playing back a tape recorded in SP mode with this recorder

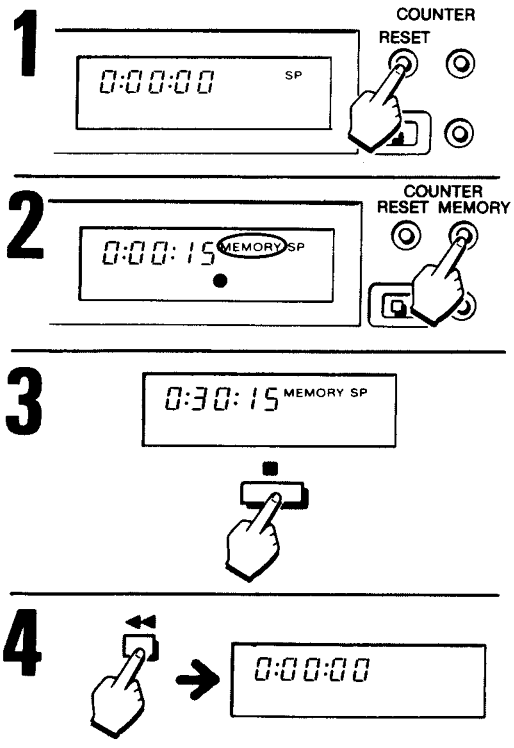
Counter 2 (0000 mode) **[b]**
When playing back a tape recorded in LP mode or a tape recorded in LP and SP modes mixed with another recorder

When recording, select either counter 1 or 2.

TO INDEX THE WHOLE TAPE

Press the RESET button at the beginning of the tape so that the counter shows "0:00:00" or "0000". By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.

T-2



TO RETURN TO A PRE-REGISTERED POINT T-2

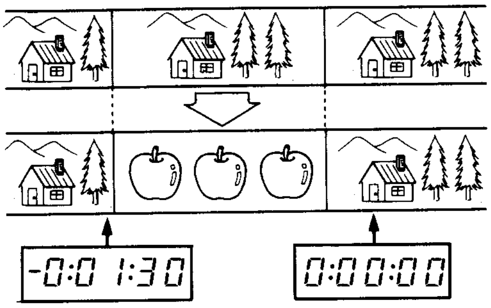
1 During recording or playback, press the RESET button at the point you later want to locate.
2 Press the MEMORY button and the "MEMORY" indicator will appear in the display window.
3 Press the ■ button, when the recording or playback has finished.
4 Press the ◀◀ or ▶▶ button.
The tape will be rewound or sent forward and stop automatically when the counter reaches zero.

NOTES

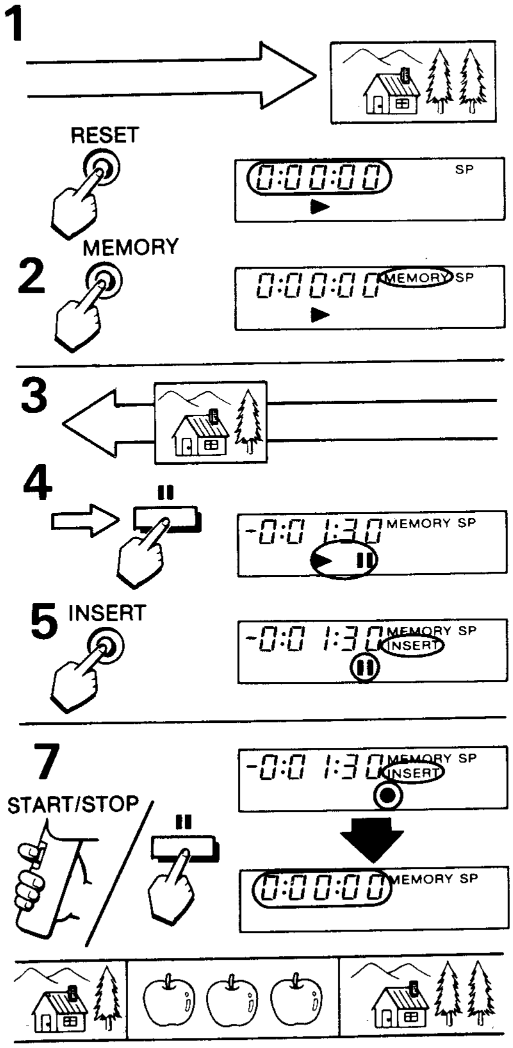
- While the "MEMORY" indicator is displayed, the counter cannot be reset to zero, therefore, press the MEMORY button to cancel the function.
- The counter reading and the point of the tape may not correspond exactly (5 digits max. for counter 1.)
- Counter 1 serves as a rough time counter. 1 digit represents approximately 1 second.
- Counter 1 will not advance during any blank portion of a tape.
- If the COUNTER selector is set to 1 and an LP-recorded tape is played back, the tape counter will not advance.

1-14. INSERT RECORDING

W-1



W-2



You can start an insert recording without registering the end point.
In this case, start operating from step **3**. Proceed with the remaining steps and stop the insertion by pressing the ■ button.

You can insert (record) video and audio simultaneously from the camera, a TV or a VCR onto any recorded tape. W-1

PREPARATION

Connect the necessary equipment and prepare a program source to be inserted.

To insert camera recording [page 15]
Slide the CAMERA POWER switch to the right and then press the VTR POWER switch (VTR-CAMERA mode).

To insert a TV program
Press the VTR POWER switch.

To insert a recording from a VCR
Press the VTR POWER switch.

Note
For insert recording, use SP-recorded tapes. LP-recorded tapes cannot be used.

OPERATION W-2

Monitor the playback picture of the recorded tape on the viewfinder screen.

1. Find the position for the end of the insert and press the RESET button. The counter returns to zero.
2. Press the MEMORY button. The "MEMORY" indicator appears in the display window.
3. Rewind the tape back a little further than the point where the insert should begin by pressing the ◀◀ button during playback.
4. Release the ◀◀ button to resume playback and press the ❚❚ button at the point where the insert should begin.
5. Press the INSERT button. The unit is set to the insert pause mode.
   The INSERT and the ❚❚ indicators will appear.
6. Play the inserting source.
7. Start insert recording:
   For camera recording, press the START/STOP button.
   For other recording, press the ❚❚ button.

The insert recording will stop at the counter zero point.

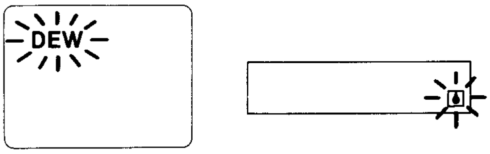
When the pause mode lasts for approximately 7 minutes, the pause mode will be automatically released and the unit will be set in the stop mode.

Note
When the inserted tape is played back, the picture may be distorted at the end of the inserted program.

1-15. NOTES ON MOISTURE CONDENSATION

If the unit is brought directly from a cold to a warm location, moisture may condense inside the unit, on the surface of the tape or on the lens. In this condition, the tape may adhere to the head drum and damaged or the unit may not operate correctly. To prevent possible damage under these circumstances, the unit is furnished with moisture sensors.

X-1



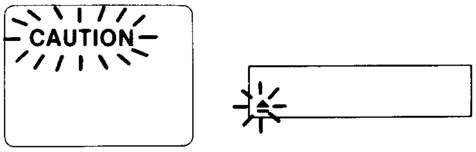
If moisture is present inside the recorder section X-1

When the power is turned on, the DEW indicator blinks in the viewfinder and the 💧 indicator blinks in the display window. No function button except the ⏏ switch will work.

Eject the cassette if present, and turn off the unit and let it sit with the cassette compartment open (at least for one hour).

The unit can be used again if none of the DEW and 💧 indicators appears when the power is turned on again.

X-2



If moisture is present on the surface of the tape X-2

When the tape is inserted and a tape transport button is pressed, the CAUTION indicator blinks in the viewfinder and the ⏏ indicator blinks in the display window. No function button except the ⏏ switch will work.

Eject the cassette and let the unit and the cassette sit at least for one hour.

The cassette can be used again if none of the CAUTION and ⏏ indicators appears when the cassette is inserted and a tape transport button is pressed.

If moisture is present on the lens
There are no caution indicator, but the lens becomes dim. Turn off the power and leave the unit unused at least for one hour.

1-16. TROUBLE INDICATORS

□ lighting ▨ blinking slow ▩ blinking fast

Operating mode / Cause	CAMERA mode		VTR mode		VTR-CAMERA mode	
	Viewfinder	Display window	Viewfinder	Display window	Viewfinder	Display window
The battery is weak.	▨ BATTERY	🔋		🔋	▨ BATTERY	🔋
The tape is near its end.	▨ TAPE END	▨ 📼		▨ 📼	▨ TAPE END	▨ 📼
The tape is at its end.	▩ TAPE END	▩ 📼 ⏏				
Moisture has condensed on the tape, etc.	▩ CAUTION	▩ ⏏		▩ ⏏	▩ CAUTION	▩ ⏏
No cassette is inserted.	▨ CASSETTE	📼		📼	▨ CASSETTE	📼
The tab on the cassette is out.	▨ CASSETTE	▨ 📼 ⏏				
Moisture has condensed inside the unit.	▨ DEW	▩ 💧		▩ 💧	▨ DEW	▩ 💧
Light is insufficient.	LOW LIGHT				LOW LIGHT	
The linear auto white balance does not work.	▨ WHITE BAL				▨ WHITE BAL	

1-17. UNDERSTANDING LIGHT AND COLOR

Brightness levels

The single greatest influence on picture quality is the brightness level. Using the following chart as a reference, take a few minutes to familiarize yourself with brightness levels to improve your recording.

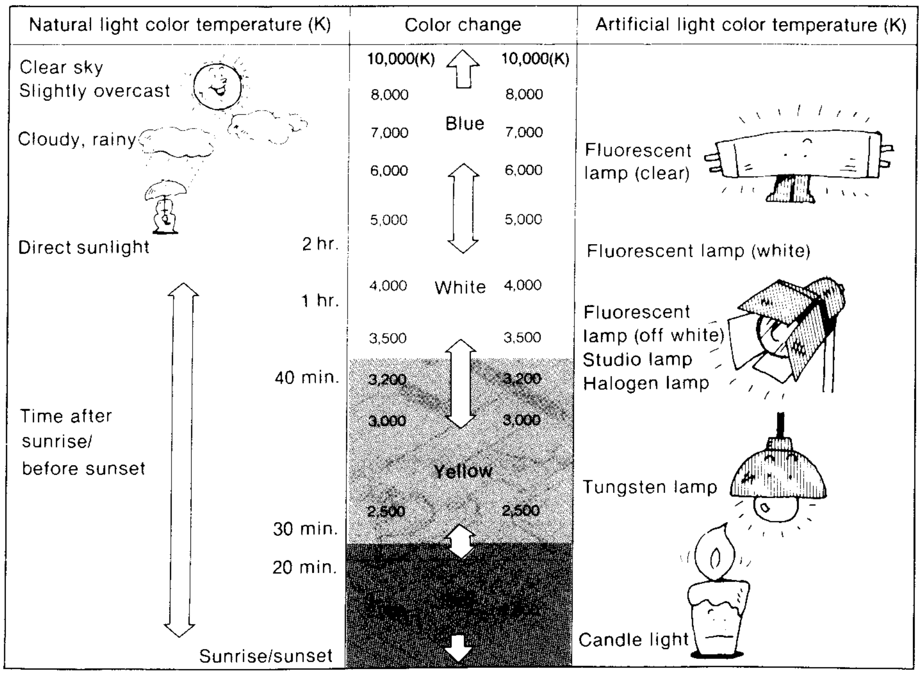
When to use an ND filter

Exceptionally bright scenes such as sunny days at the beach in summer or on snow fields in winter will look "washed out" when recorded. To make these scenes recorded naturally, an ND filter is required. (Refer to the chart)
Three types are available—ND2, ND4, ND8—which reduce the exposure level to 1/2, 1/4, and 1/8, respectively.
Select filters to match the lens diameter of 52 mm.

ND filter required	Unit: lux	Snow-covered mountains Snow fields Sandy beach, clear day in summer Clear day, mid-day(100,000)
Normal recording	100,000	Clear day, mid-afternoon (35,000) Overcast day, mid-day (32,000)
	10,000	Overcast day, one hour after sunrise (2,000)
	1,000	Office lit by fluorescent lamps, near window (1,000) Clear day, one hour before sunset (1,000) Department store counter (500~700)
	500	Station wicket (650) Office lit by fluorescent lamps (400~500) Room lit by two 30 W fluorescent lamps (300)
Video light recommended	300	Subway station platform (300)
	100	Arcade at night (150~200)
Video light required		Theater lobby (15~35) Candle light (10~15)
	10	

Color temperature—how it effects white balance adjustment

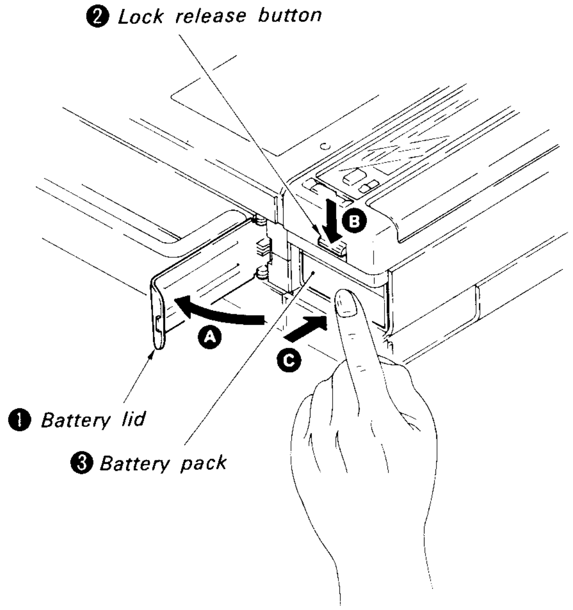
If the temperature of an object continues to increase, it will eventually begin giving off light. At this time, there is a fixed relationship between the object's temperature and its "light color." The temperature of the object radiating the light is expressed in absolute temperature (K). This is also known as the color temperature, which in turn stands for "light color." As color temperature increases, the light color changes from red to yellow to white to blue.


Natural light color temperature (K)
Color change
Artificial light color temperature (K)
Clear sky
Slightly overcast
Cloudy, rainy
Direct sunlight
2 hr.
1 hr.
40 min.
Time after sunrise/ before sunset
30 min.
20 min.
Sunrise/sunset
10,000(K)
8,000
7,000
Blue
6,000
5,000
4,000
White
3,500
3,200
3,000
Yellow
2,500
Fluorescent lamp (clear)
Fluorescent lamp (white)
Fluorescent lamp (off white)
Studio lamp
Halogen lamp
Tungsten lamp
Candle light

SECTION 2
DISASSEMBLY

2-1. REMOVAL OF BATTERY PACK

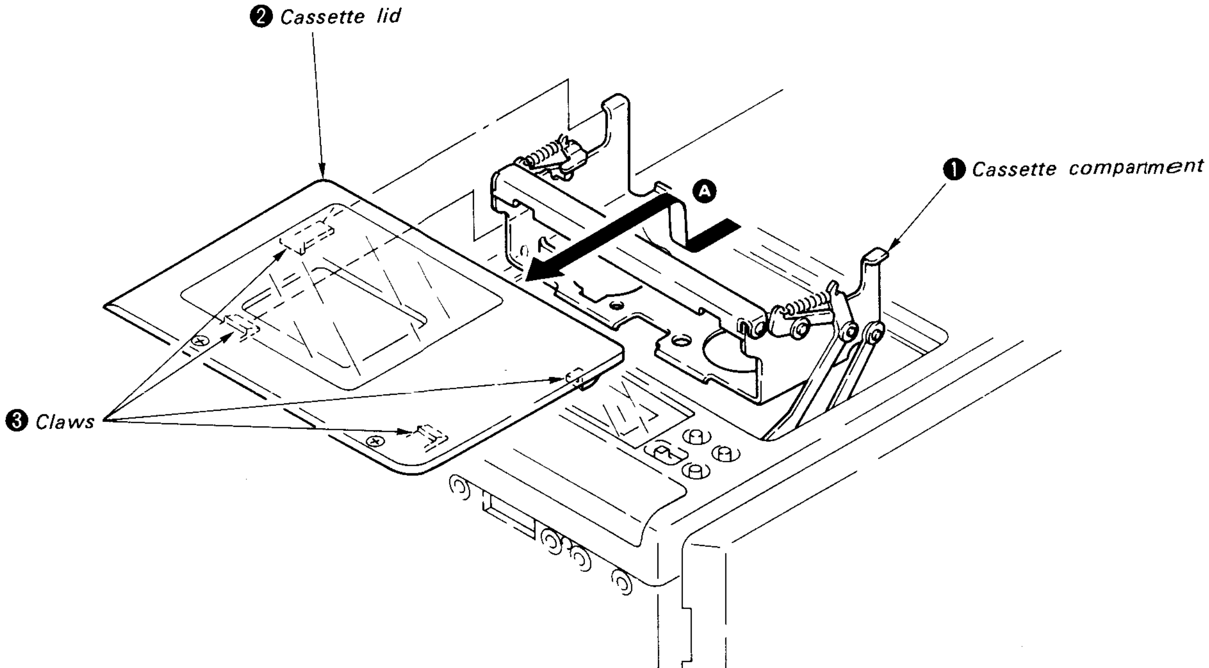
1) Open battery lid ❶ in the direction of arrow 🅐.
2) Press deeply battery pack ❸ in the direction of arrow 🅒 until it clicks while pressing lock release button ❷ in the direction of arrow 🅑.
3) Take out battery pack ❸ which is pushed out by spring.


❷ Lock release button
🅑
🅐
🅒
❶ Battery lid
❸ Battery pack

2-2. REMOVAL OF CASSETTE LID

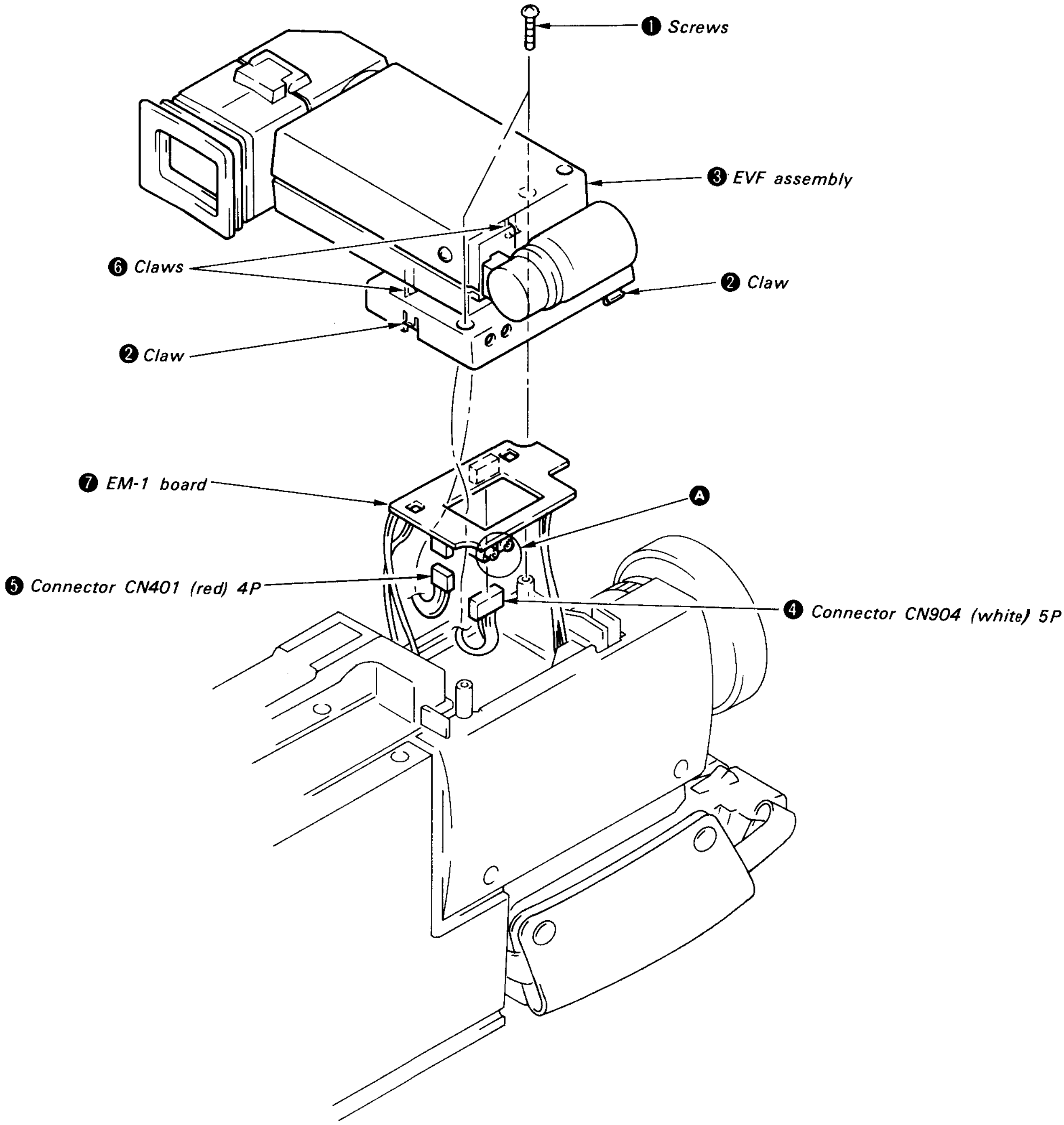
1) Turn ON the power supply, slide the EJECT knob, and make the cassette compartment ❶ into the up state.
2) Remove cassette lid ❷ by sliding in the direction of arrow 🅐.

Note: When setting cassette lid ❷, set the cassette lid so that respective claws ❸ put into the respective positions.


❷ Cassette lid
🅐
❶ Cassette compartment
❸ Claws

2-3. REMOVAL OF EVF (ELECTRONIC VIEW FINDER) ASSEMBLY

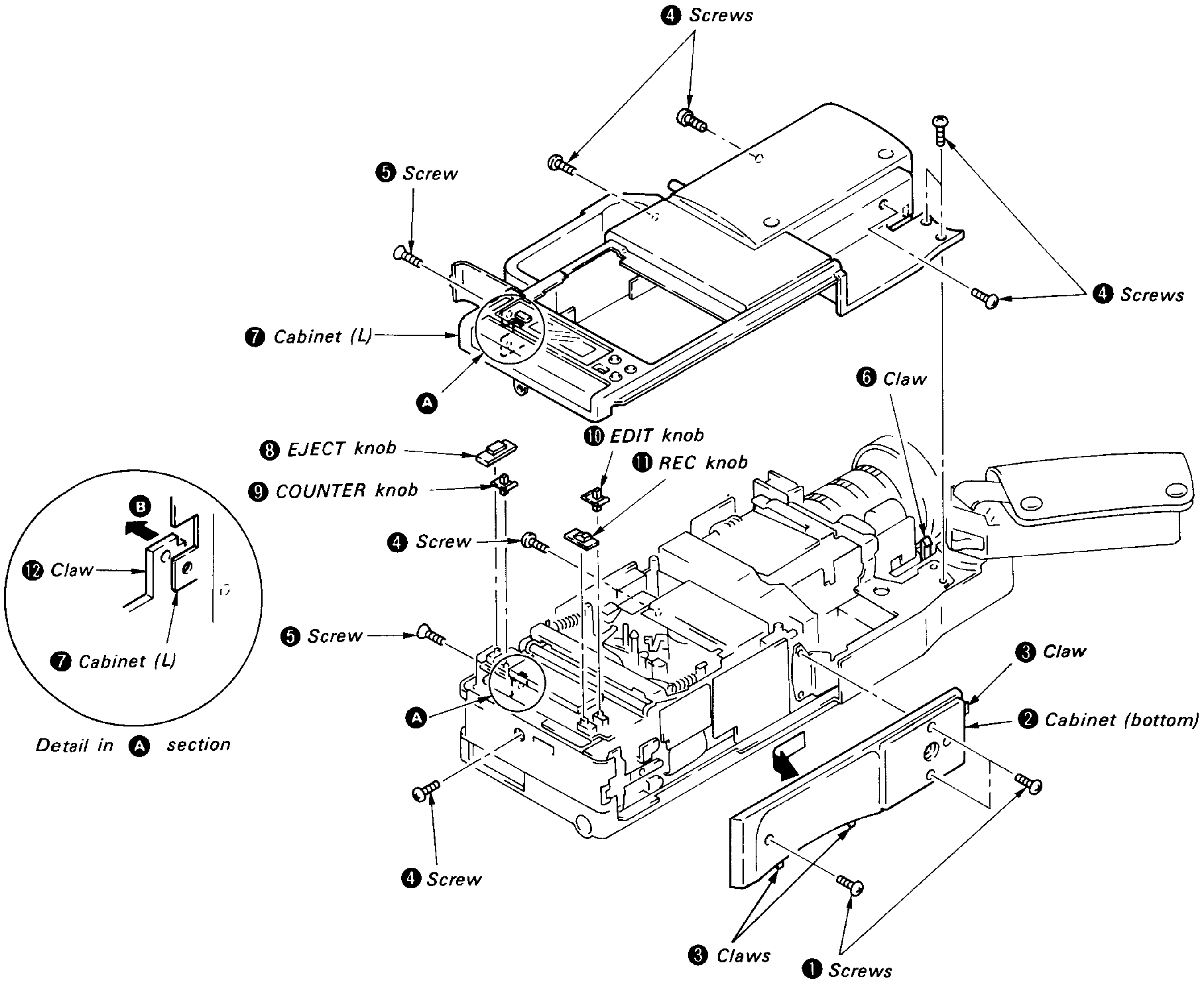
1) Remove two screws ❶.
2) Remove two claws ❷ and remove EVF assembly ❸.
3) Remove the connectors CN904 (white) ❹ and CN401 (red) ❺.
4) Remove two claws ❻ and remove EM-1 board ❼ by taking care to section 🅐.


❶ Screws
❸ EVF assembly
❻ Claws
❷ Claw
❷ Claw
❼ EM-1 board
🅐
❺ Connector CN401 (red) 4P
❹ Connector CN904 (white) 5P

2-4. REMOVAL OF CABINET

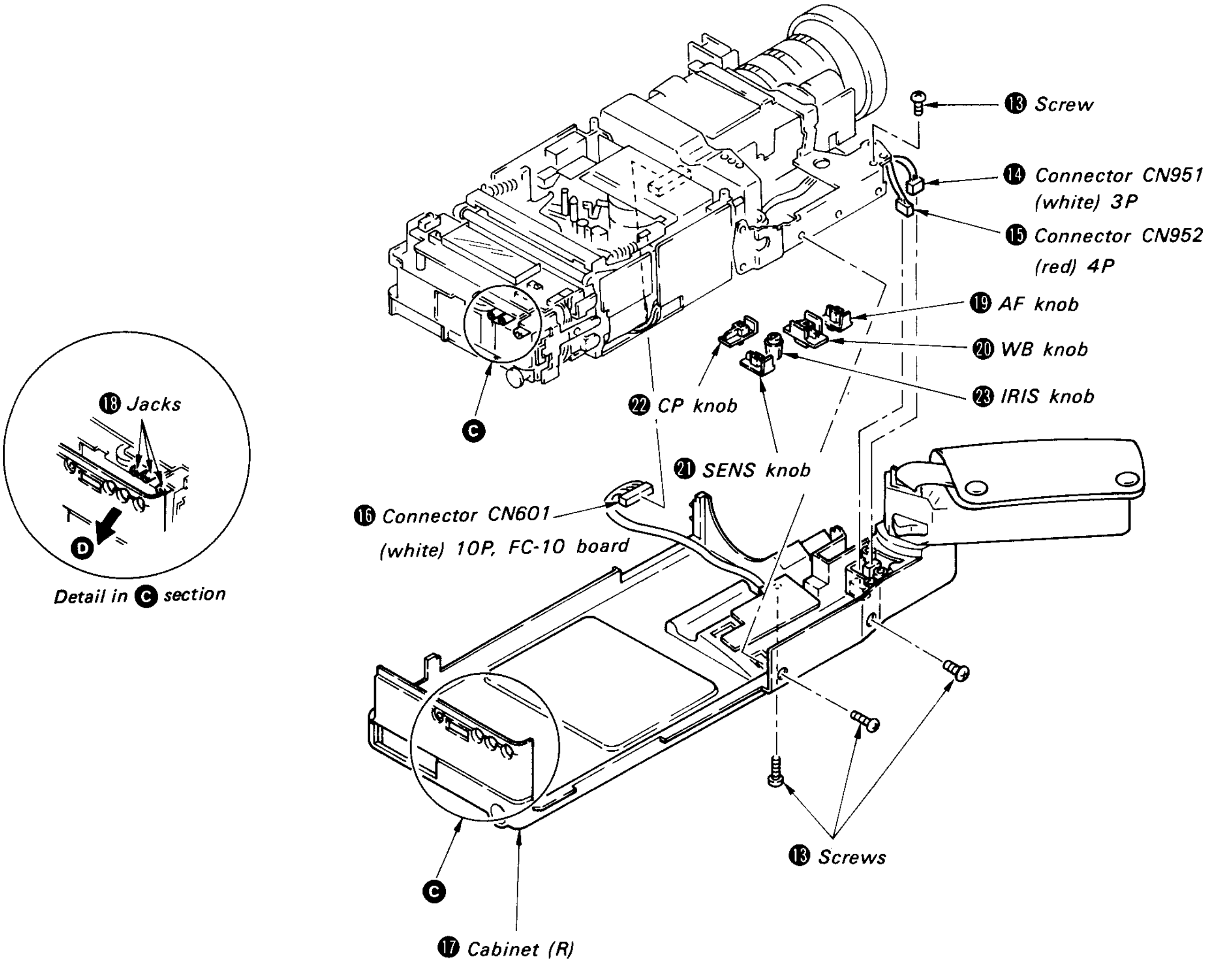
1) Remove cassette lid by referring to 2-2.
2) Remove EVF assembly by referring to 2-3.
3) Remove three screws ❶.
4) Remove cabinet (bottom) ❷ by shifting it in the direction of arrow while unhooking claws ❸.
5) Remove seven screws ❹ and two screws ❺.
6) Remove claw ❻ and remove cabinet (L) ❼.
7) Remove EJECT knob ❽, COUNTER knob ❾, EDIT knob ❿, and REC knob ⓫.

Note: When installing cabinet (L) ❼, install it between the main body and claw ⓬ in the section Ⓐ by opening it in the direction of arrow Ⓑ.


❹ Screws
❺ Screw
❹ Screws
❼ Cabinet (L)
Ⓐ
❻ Claw
❽ EJECT knob
❿ EDIT knob
⓫ REC knob
❾ COUNTER knob
Ⓑ
⓬ Claw
❹ Screw
❺ Screw
❼ Cabinet (L)
❸ Claw
Ⓐ
❷ Cabinet (bottom)
❹ Screw
❸ Claws
❶ Screws

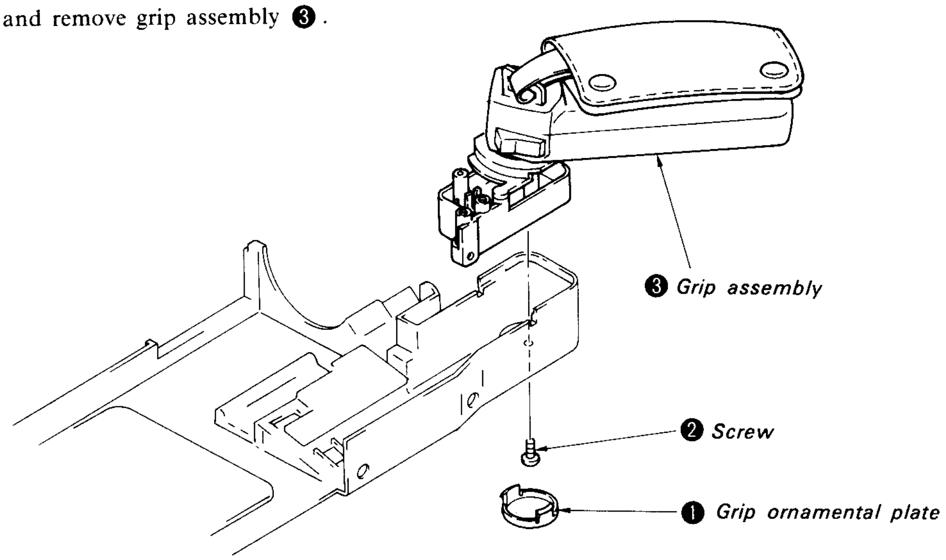
Detail in Ⓐ *section*

8) Remove four screws ⑬ .
9) Remove the connectors CN951 (white) ⑭ , CN952 (red) ⑮ and CN601 (white) ⑯ .
10) Remove cabinet (R) ⑰ in section Ⓒ by opening it widely in the direction of arrow Ⓓ while releasing it from jack ⑱ .
11) Remove AF knob ⑲ , WB knob ⑳ , SENS knob ㉑ , CP knob ㉒ and IRIS knob ㉓ .


⑬ Screw
⑭ Connector CN951 (white) 3P
⑮ Connector CN952 (red) 4P
⑲ AF knob
⑳ WB knob
㉓ IRIS knob
㉒ CP knob
㉑ SENS knob
Ⓒ
⑱ Jacks
Ⓓ
Detail in Ⓒ section
⑯ Connector CN601 (white) 10P, FC-10 board
⑬ Screws
Ⓒ
⑰ Cabinet (R)

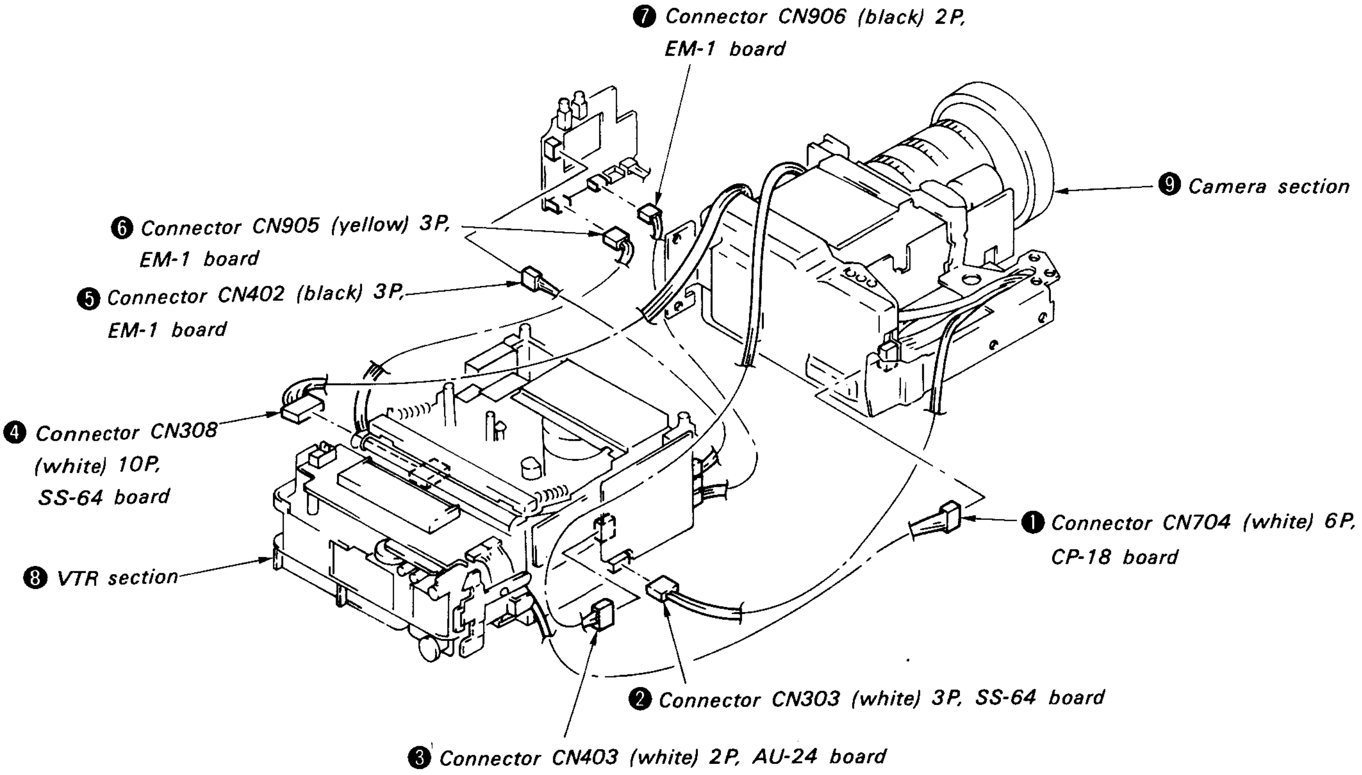
2-5. REMOVAL OF GRIP ASSEMBLY

1) Remove cabinet (R) by referring to 2-4.
2) Remove grip ornamental plate ❶.
3) Remove screw ❷ and remove grip assembly ❸.


❸ Grip assembly
❷ Screw
❶ Grip ornamental plate

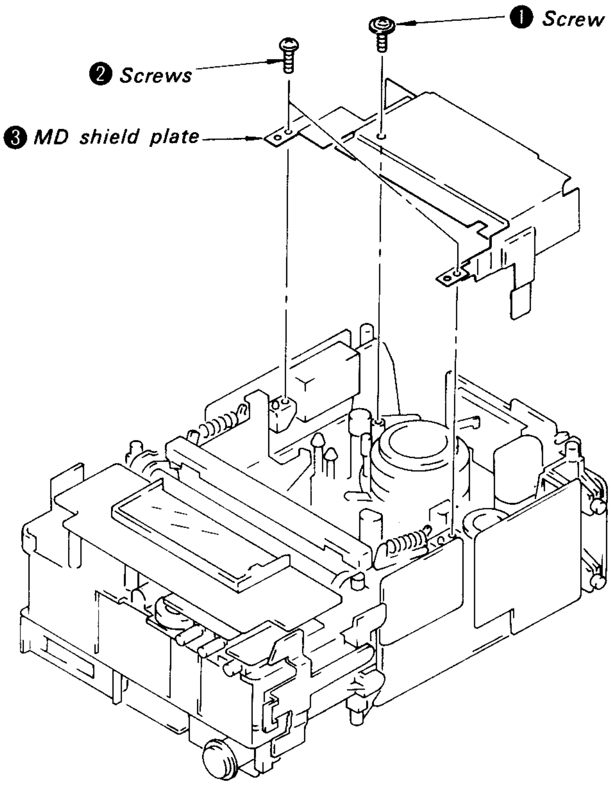
2-6. SEPARATION OF VTR SECTION AND CAMERA SECTION

1) Remove connectors CN704 (white) ❶, CN303 (white) ❷, CN403 (white) ❸, CN308 (white) ❹, CN402 (black) ❺, CN905 (yellow) ❻ and CN906 (black) ❼.
2) Separate VTR section ❽ and camera section ❾.


❼ Connector CN906 (black) 2P, EM-1 board
❾ Camera section
❻ Connector CN905 (yellow) 3P, EM-1 board
❺ Connector CN402 (black) 3P, EM-1 board
❹ Connector CN308 (white) 10P, SS-64 board
❽ VTR section
❶ Connector CN704 (white) 6P, CP-18 board
❷ Connector CN303 (white) 3P, SS-64 board
❸ Connector CN403 (white) 2P, AU-24 board

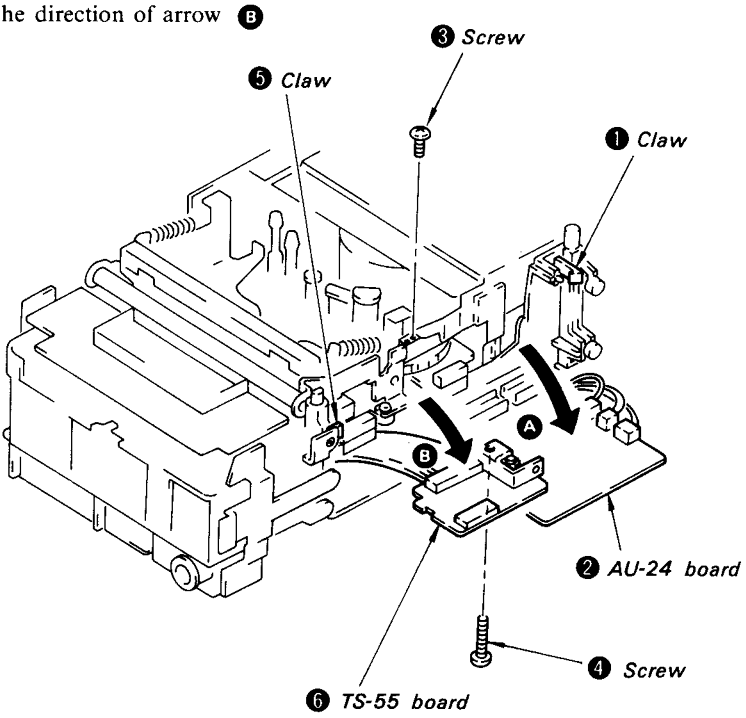
2-7. REMOVAL OF MD SHIELD PLATE

1) Remove screw ❶ and two screws ❷ and remove MD shield plate ❸.


❶ Screw
❷ Screws
❸ MD shield plate

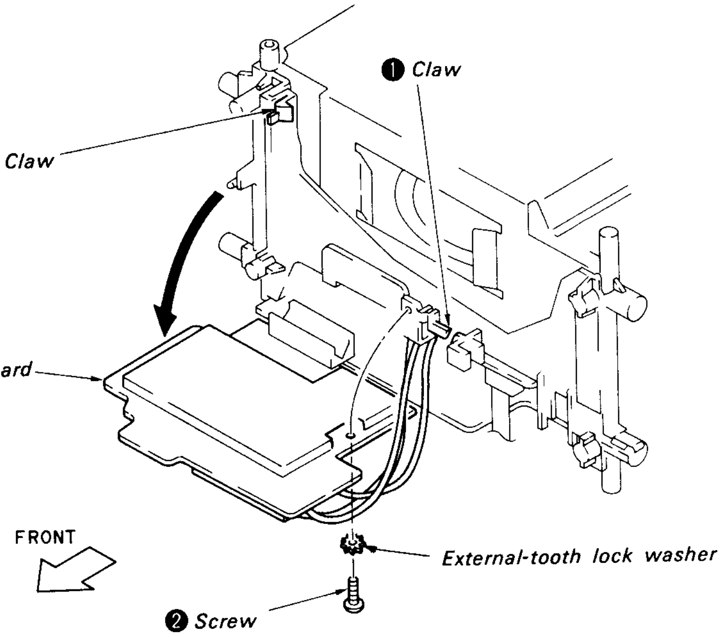
2-8. OPENING OF THE AU-24 BOARD AND THE TS-55 BOARD

1) Remove claw ❶ and open the AU-24 board ❷ in the direction of arrow Ⓐ. (Do not care the opening sound.)
2) Remove screws ❸ and ❹.
3) Open the TS-55 board ❻ in the direction of arrow Ⓑ while removing claw ❺.


❸ Screw
❺ Claw
❶ Claw
Ⓐ
Ⓑ
❷ AU-24 board
❹ Screw
❻ TS-55 board

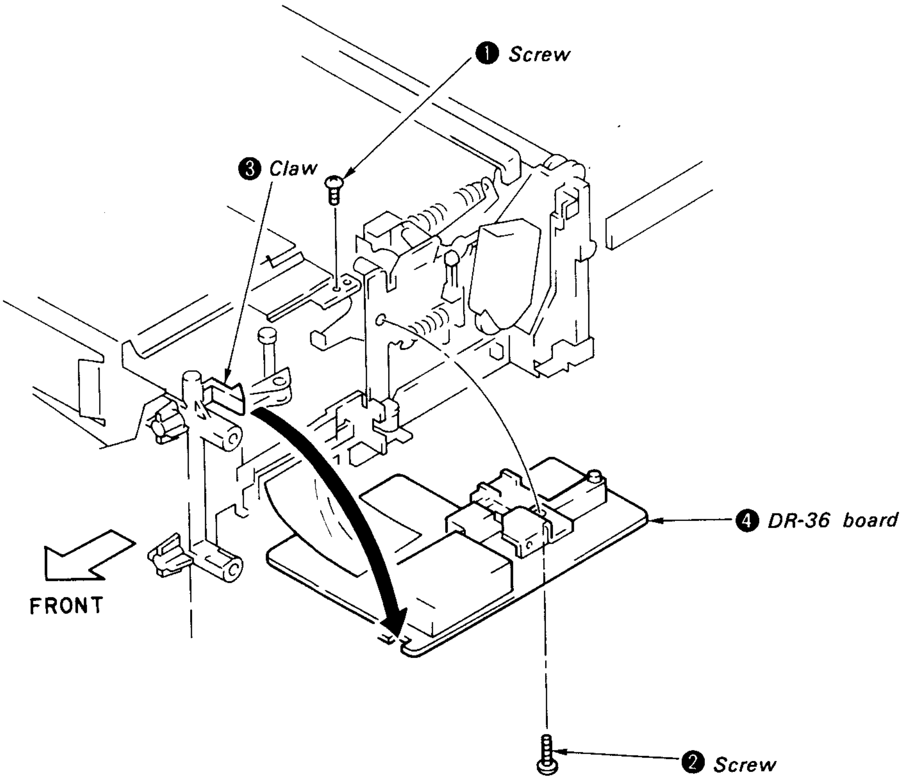
2-9. OPENING OF THE RP-39 BOARD

1) Remove the harness from claw ❶.
2) Remove screw ❷.
3) Remove claw ❸ and open the RP-39 board ❹ in the direction of arrow. (Do not care the opening sound.)


❶ Claw
❸ Claw
❹ RP-39 board
FRONT
External-tooth lock washer
❷ Screw

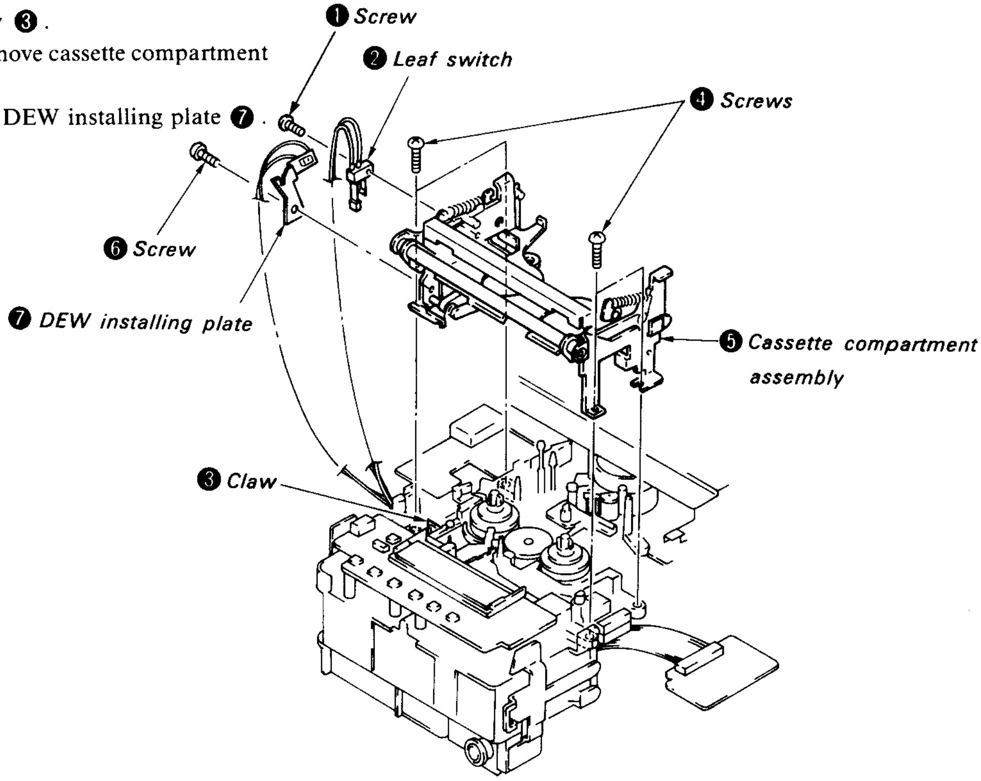
2-10. OPENING OF THE DR-36 BOARD

1) Remove screws ❶ and ❷.
2) Remove claw ❸ and open the DR-36 board ❹ in the direction of arrow.


❶ Screw
❸ Claw
❹ DR-36 board
FRONT
❷ Screw

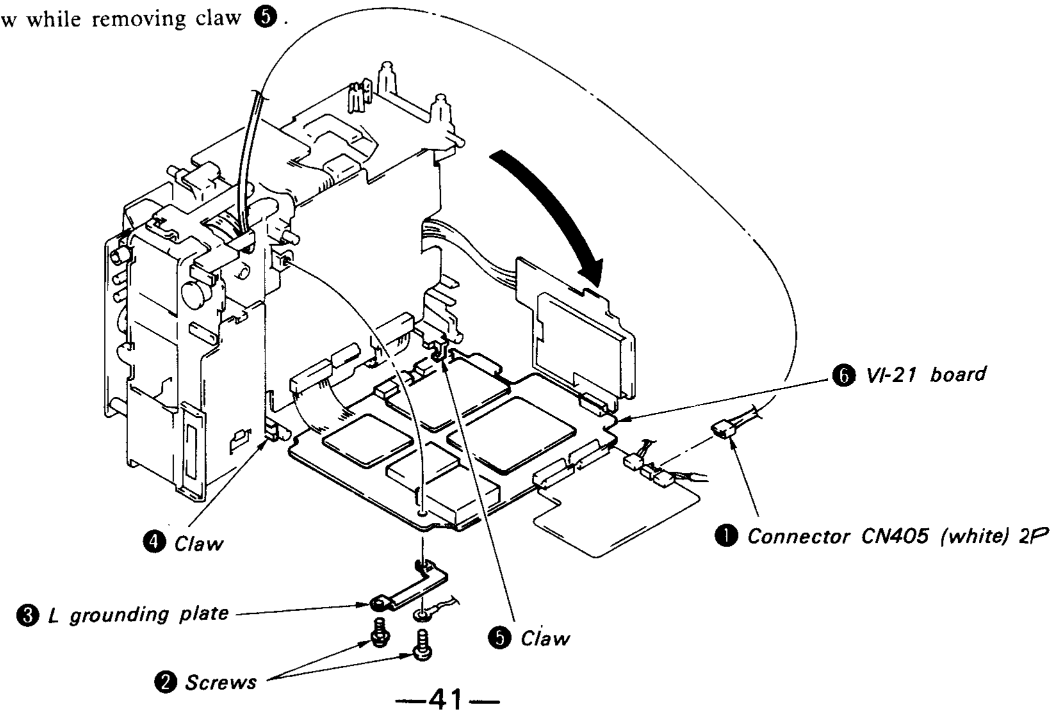
2-11. REMOVAL OF CASSETTE COMPARTMENT ASSEMBLY

1) Open the TS-55 board by referring to 2-8.
2) Open the DR-36 board by referring to 2-10.
3) Remove screw ❶ and remove leaf switch ❷.
4) Remove the harness from claw ❸.
5) Remove four screws ❹ and remove cassette compartment assembly ❺.
6) Remove screw ❻ and remove DEW installing plate ❼.


❶ Screw
❷ Leaf switch
❹ Screws
❻ Screw
❼ DEW installing plate
❺ Cassette compartment assembly
❸ Claw

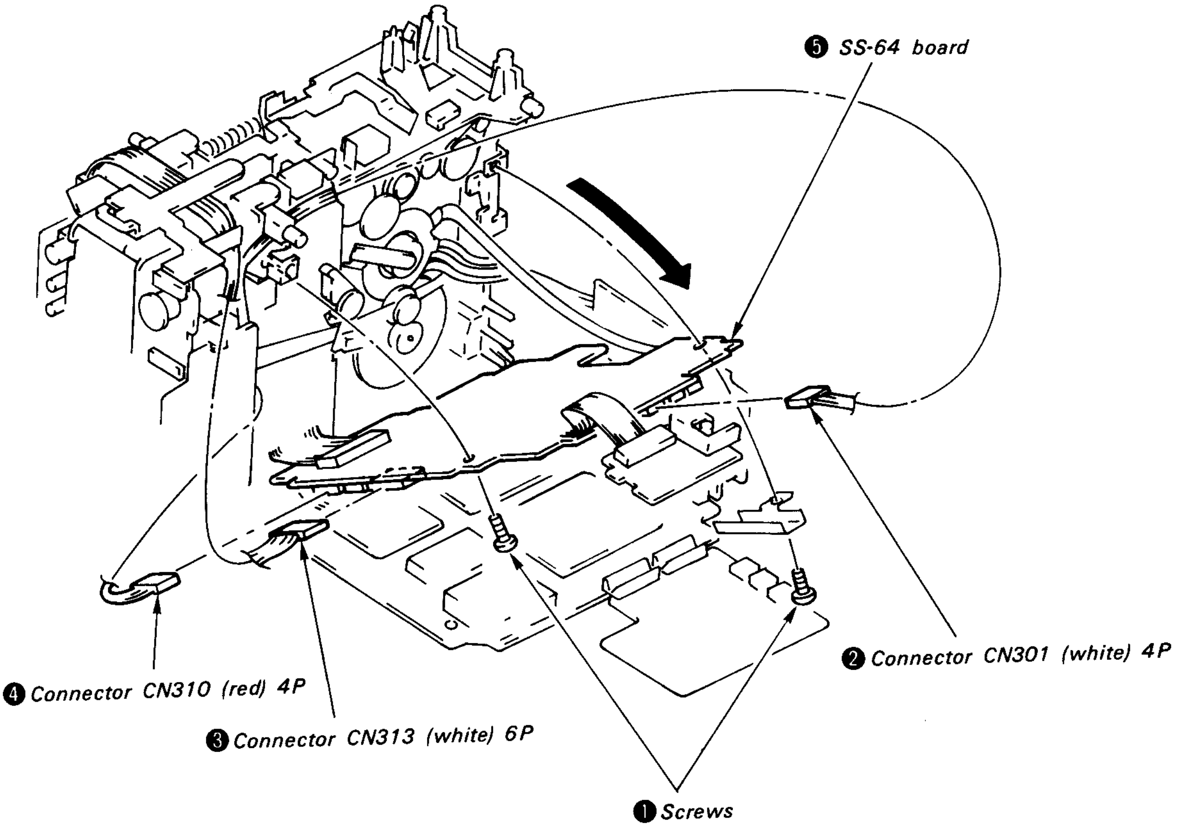
2-12. OPENING OF THE VI-21 BOARD

1) Open the AU-24 board by referring to 2-8.
2) Open the RP-39 board by referring to 2-9.
3) Remove connector CN405 (white) ❶.
4) Remove two screws ❷ and remove L grounding plate ❸.
5) Remove claw ❹ and open the VI-21 board ❻ in the direction of arrow while removing claw ❺.


❻ VI-21 board
❹ Claw
❶ Connector CN405 (white) 2P
❸ L grounding plate
❺ Claw
❷ Screws

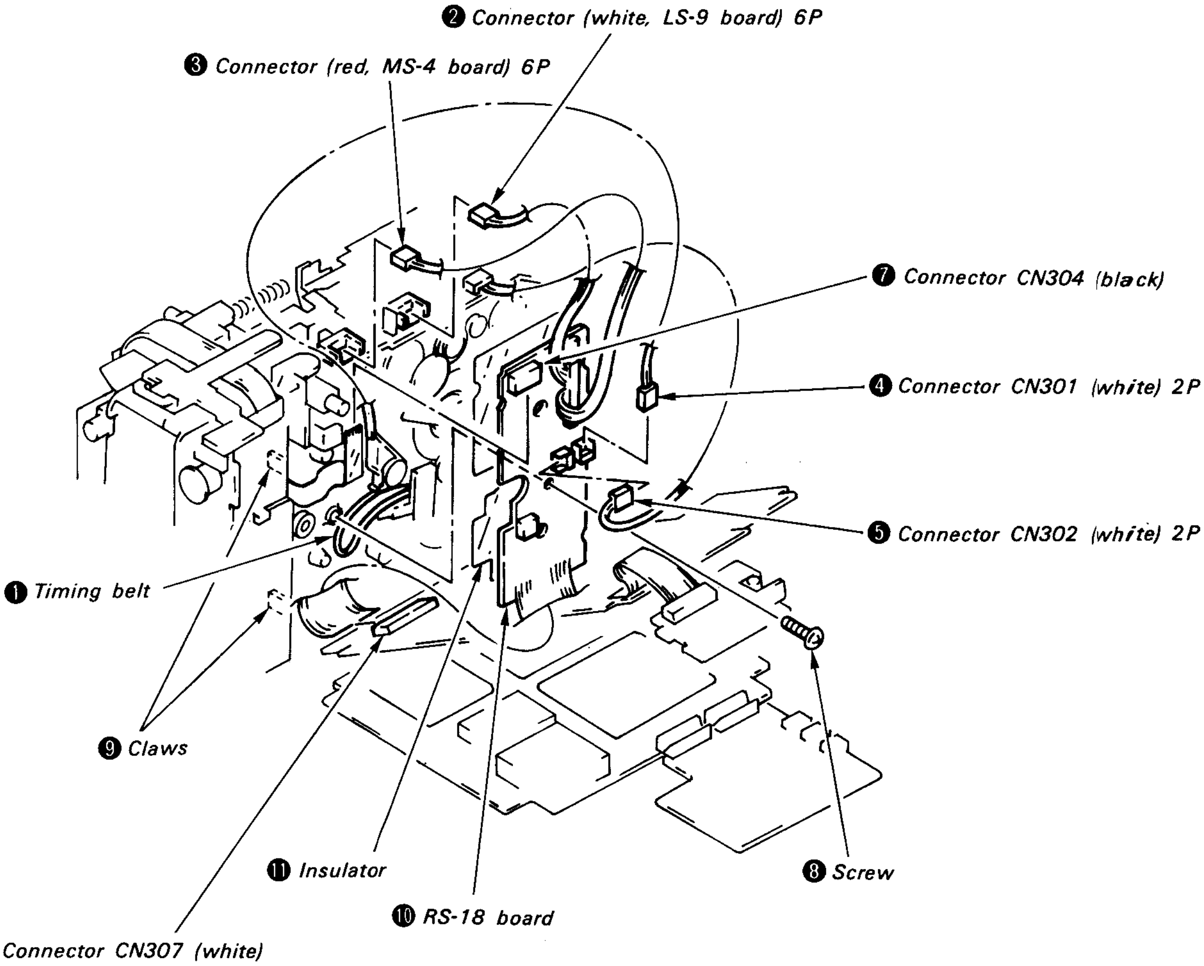
2-13. OPENING OF THE SS-64 BOARD

1) Open the VI-21 board by referring to 2-12.
2) Open the TS-55 board by referring to 2-8.
3) Remove two screws ❶.
4) Remove connectors CN301 (white) ❷, CN313 (white) ❸ and CN310 (red) ❹.
5) Open the SS-64 board ❺ in the direction of arrow.


❺ SS-64 board
❷ Connector CN301 (white) 4P
❹ Connector CN310 (red) 4P
❸ Connector CN313 (white) 6P
❶ Screws

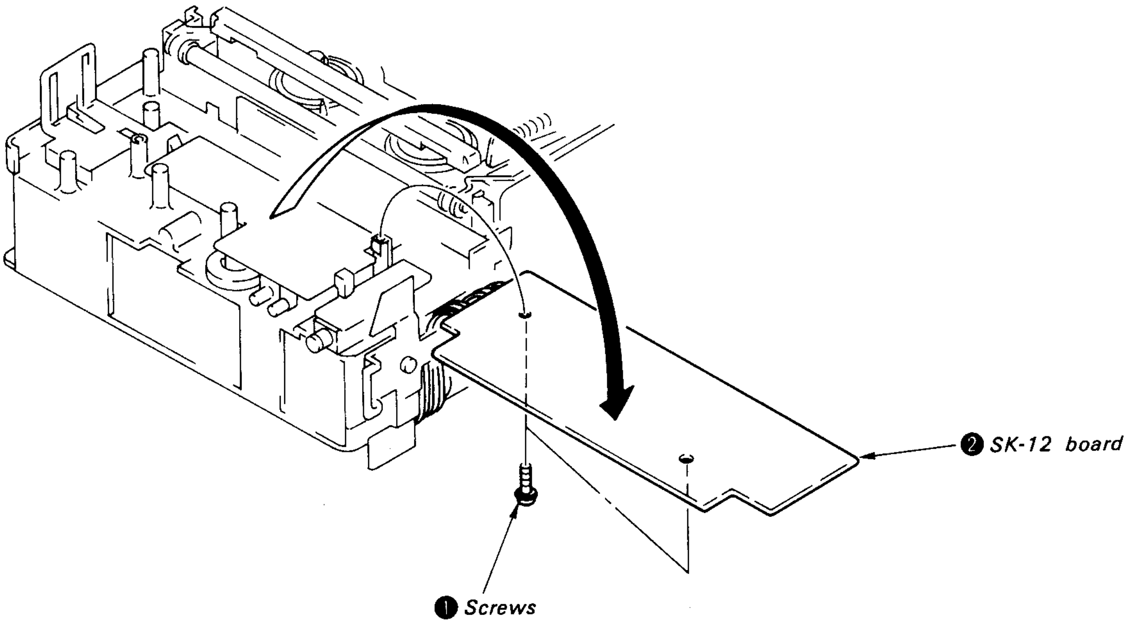
2-14. REMOVAL OF THE RS-18 BOARD

1) Open the SS-64 board by referring to 2-13.
2) Remove timing belt ❶ from the pulley.
3) Remove connectors ❷ (white, LS-9 board), ❸ (red, MS-4 board), CN301 (white) ❹, CN302 (white) ❺, CN307 (white) ❻ and CN304 (black) ❼.
4) Remove screw ❽.
5) Remove the RS-18 board ❿ while removing two claws ❾.
6) Remove insulator ⓫.


❷ Connector (white, LS-9 board) 6P
❸ Connector (red, MS-4 board) 6P
❼ Connector CN304 (black)
❹ Connector CN301 (white) 2P
❺ Connector CN302 (white) 2P
❶ Timing belt
❾ Claws
⓫ Insulator
❽ Screw
❿ RS-18 board
❻ Connector CN307 (white)

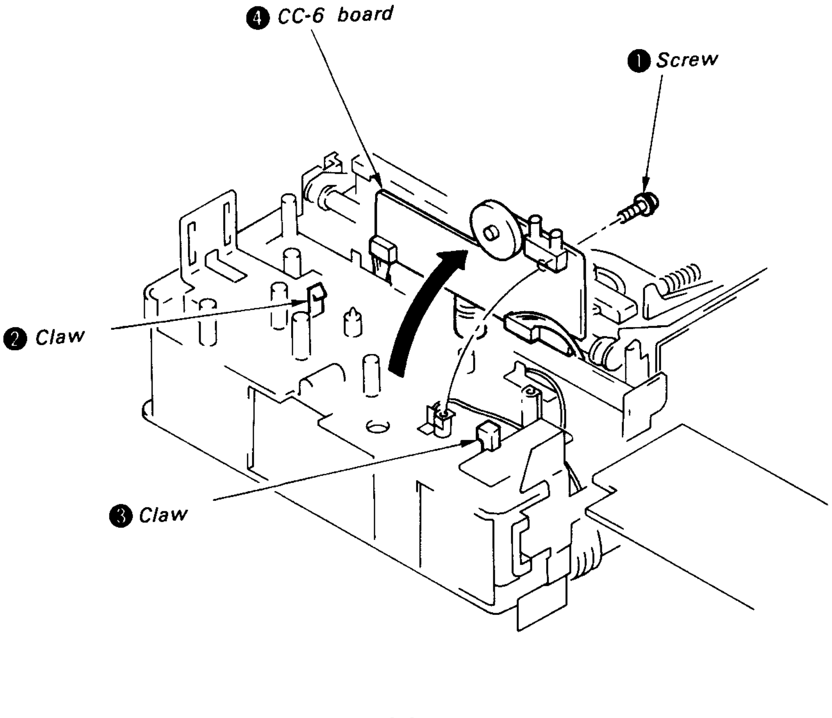
2-15. OPENING OF THE SK-12 BOARD

1) Remove two screw ❶ and open the SK-12 board ❷ in the direction of arrow.


❷ SK-12 board
❶ Screws

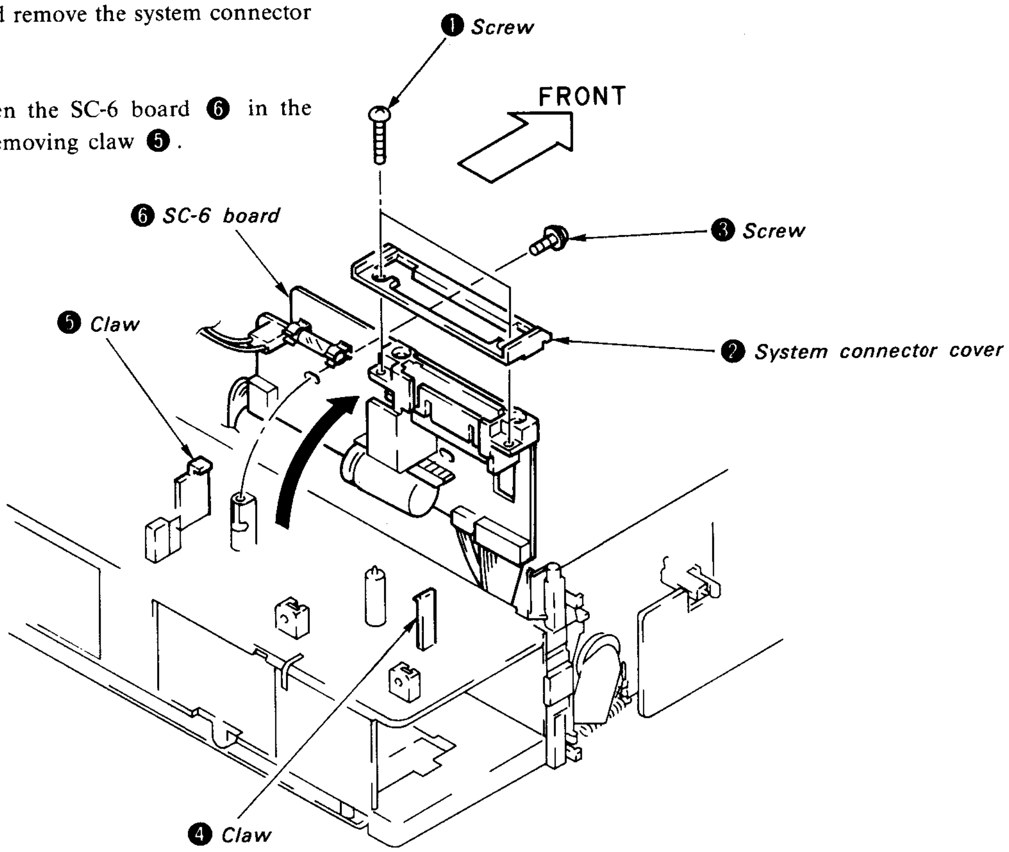
2-16. OPENING OF THE CC-6 BOARD

1) Open the SK-12 board by referring to 2-15.
2) Remove screw ❶ .
3) Remove claw ❷ and open the CC-6 board ❹ in the direction of arrow while removing claw ❸ .


❹ CC-6 board
❶ Screw
❷ Claw
❸ Claw

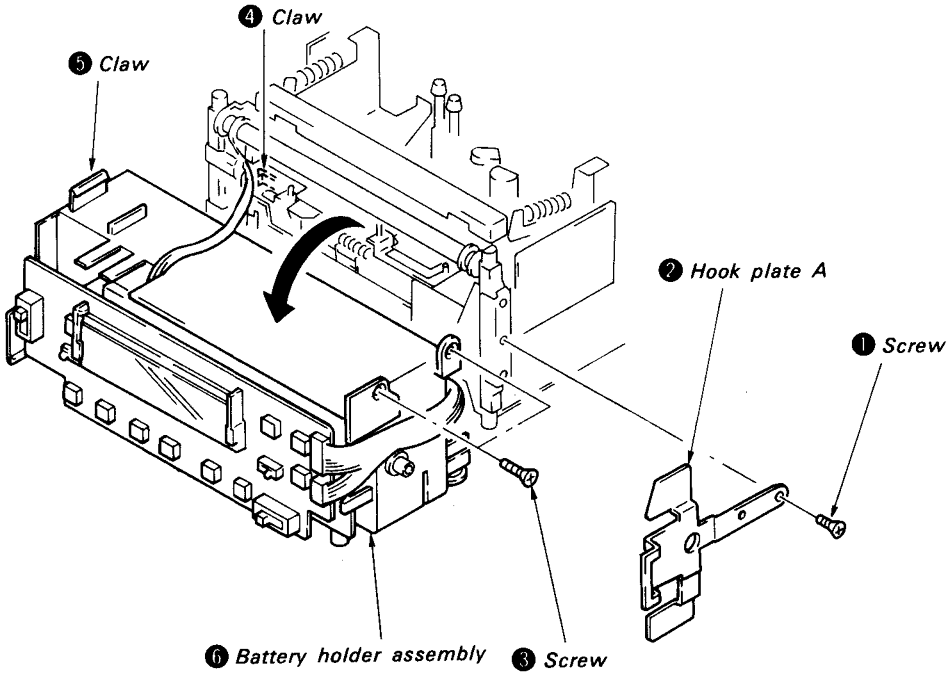
2-17. OPENING OF THE SC-6 BOARD

1) Remove two screws ❶ and remove the system connector cover ❷.
2) Remove screw ❸.
3) Remove claw ❹ and open the SC-6 board ❻ in the direction of arrow while removing claw ❺.


❶ Screw
FRONT
❻ SC-6 board
❸ Screw
❺ Claw
❷ System connector cover
❹ Claw

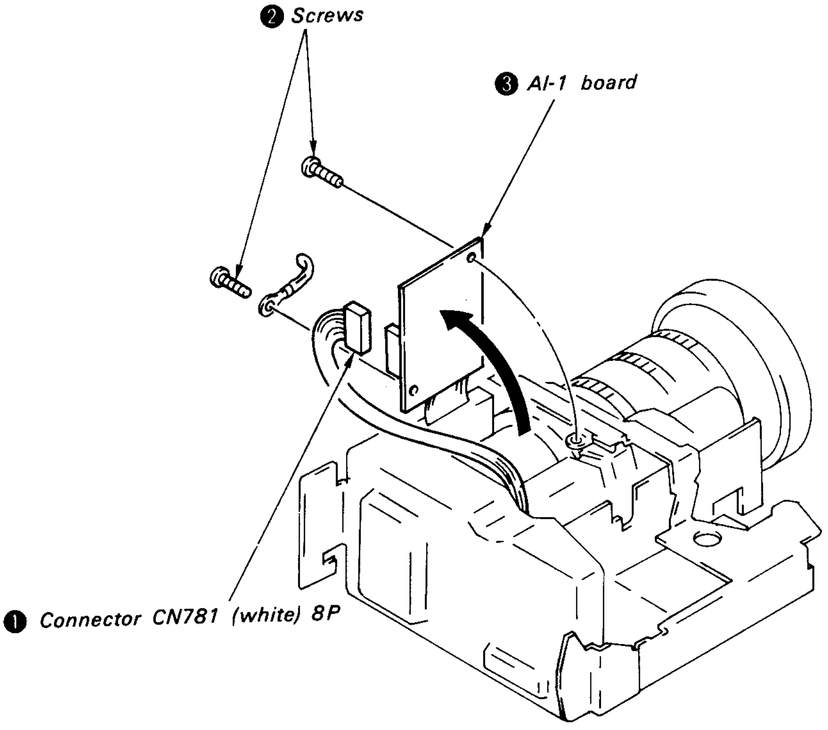
2-18. OPENING OF THE BATTERY HOLDER ASSEMBLY

1) Remove screw ❶ and remove the hook plate A ❷.
2) Remove two screws ❸.
3) Remove the harness from claw ❹.
4) Open the battery holder assembly ❻ while removing claw ❺.


❹ Claw
❺ Claw
❷ Hook plate A
❶ Screw
❻ Battery holder assembly
❸ Screw

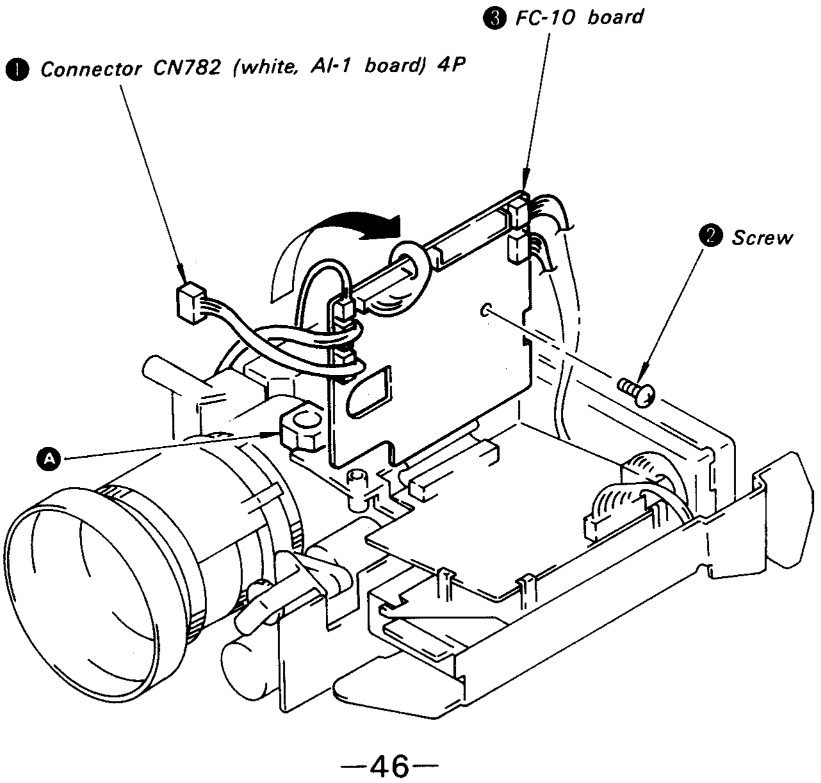
2-19. OPENING OF THE AI-1 BOARD

1) Remove connector CN781 (white) ❶.
2) Remove two screws ❷ and open the AI-1 board ❸ in the direction of arrow.


❷ Screws
❸ AI-1 board
❶ Connector CN781 (white) 8P

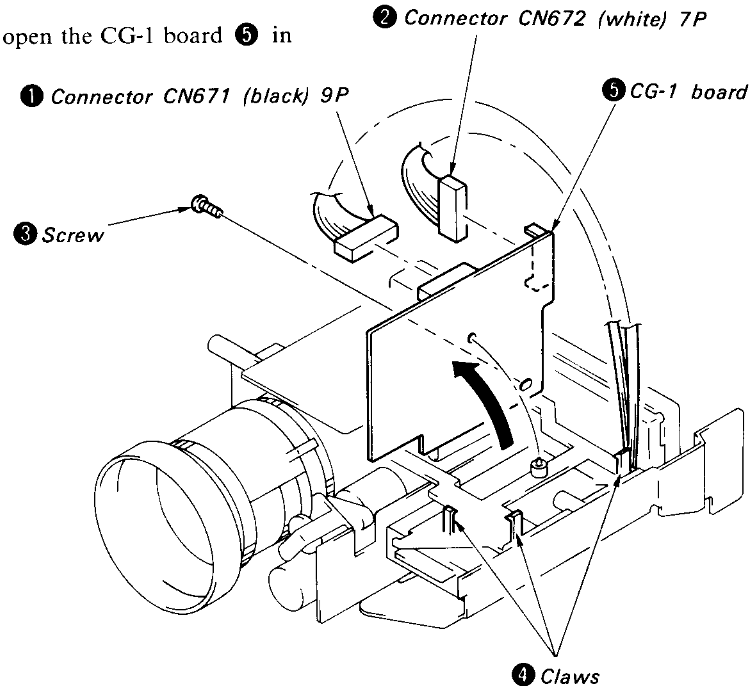
2-20. OPENING OF THE FC-10 BOARD

1) Remove connector CN782 (white) ❶.
2) Remove screw ❷.
3) Open the FC-10 board ❸ in the direction of arrow while removing the Ⓐ section.


❸ FC-10 board
❶ Connector CN782 (white, AI-1 board) 4P
❷ Screw
Ⓐ

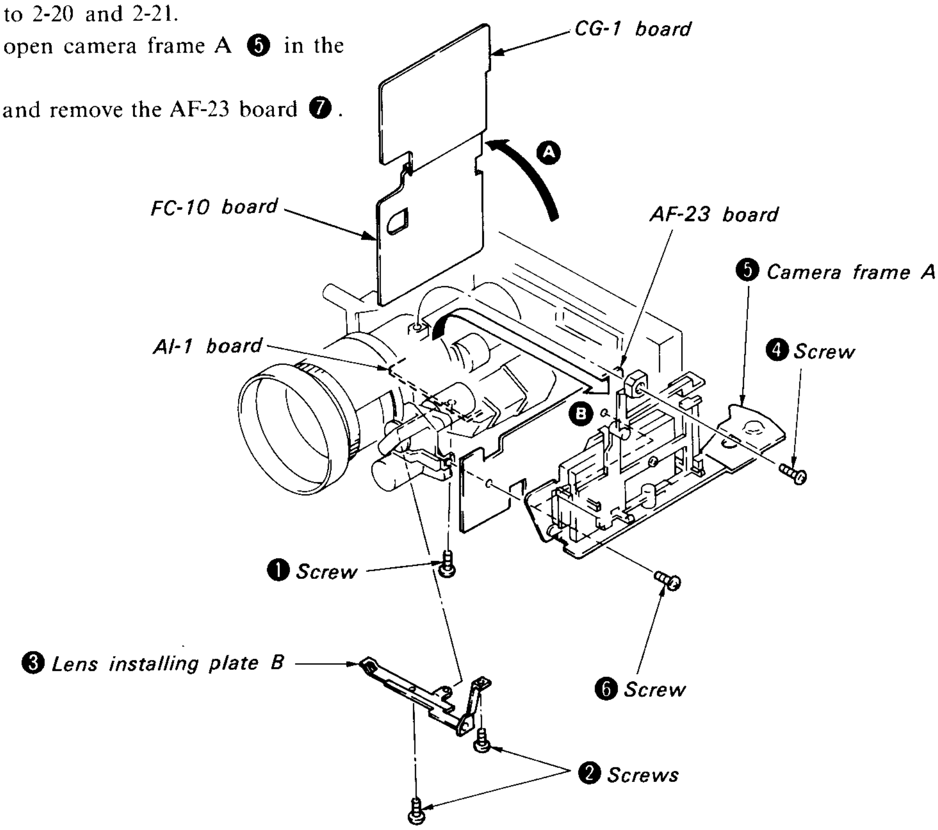
2-21. OPENING OF THE CG-1 BOARD

1) Remove connectors CN671 (black) ❶ and CN672 (white) ❷.
2) Remove screw ❸.
3) Remove three claws ❹ and open the CG-1 board ❺ in the direction of arrow.


❷ Connector CN672 (white) 7P
❶ Connector CN671 (black) 9P
❺ CG-1 board
❸ Screw
❹ Claws

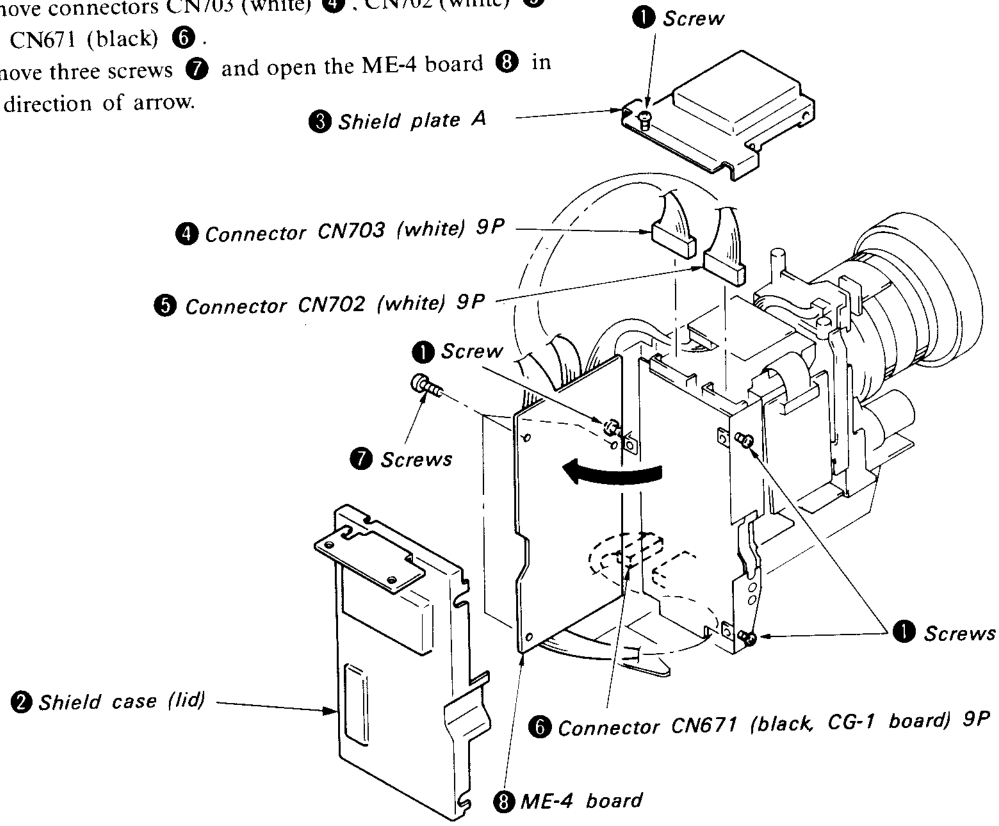
2-22. REMOVAL OF THE AF-23 BOARD

1) Remove screw ❶ fastening the AI-1 board.
2) Remove two screws ❷ and remove the lens installing plate B ❸.
3) Open the FC-10 board and CG-1 board in the direction of arrow Ⓐ by referring to 2-20 and 2-21.
4) Remove screw ❹ and open camera frame A ❺ in the direction of arrow Ⓑ.
5) Remove two screws ❻ and remove the AF-23 board ❼.


CG-1 board
Ⓐ
FC-10 board
AF-23 board
❺ Camera frame A
❹ Screw
AI-1 board
Ⓑ
a
❶ Screw
❸ Lens installing plate B
❻ Screw
❷ Screws

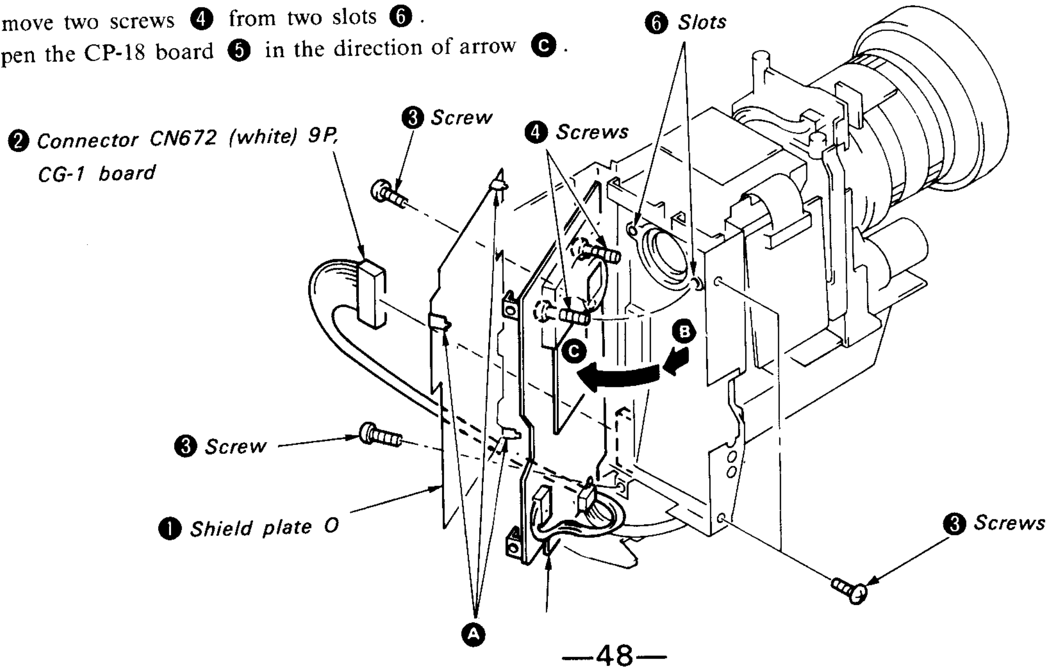
2-23. OPENING OF THE ME-4 BOARD

1) Loosen four screws ❶ and remove shield case (lid) ❷.
2) Remove shield plate A ❸.
3) Remove connectors CN703 (white) ❹, CN702 (white) ❺ and CN671 (black) ❻.
4) Remove three screws ❼ and open the ME-4 board ❽ in the direction of arrow.

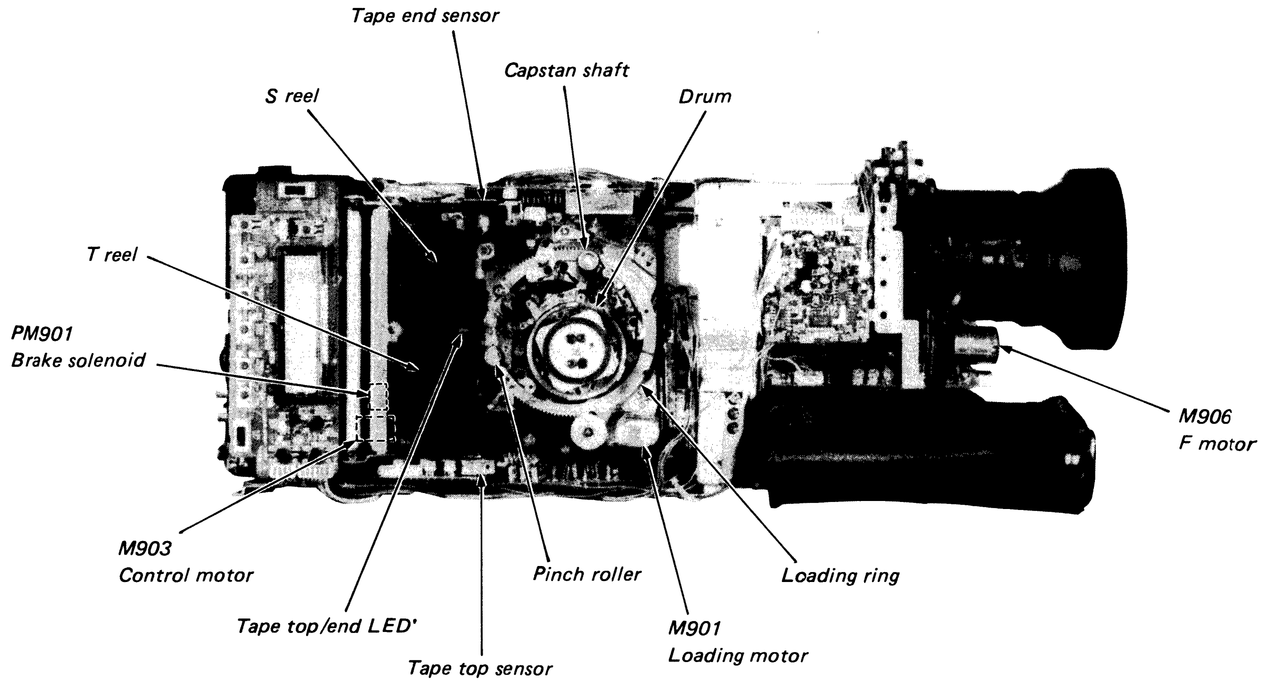

❶ Screw
❸ Shield plate A
❹ Connector CN703 (white) 9P
❺ Connector CN702 (white) 9P
❶ Screw
❼ Screws
❶ Screws
❷ Shield case (lid)
❻ Connector CN671 (black, CG-1 board) 9P
❽ ME-4 board

2-24. OPENING OF THE CP-18 BOARD

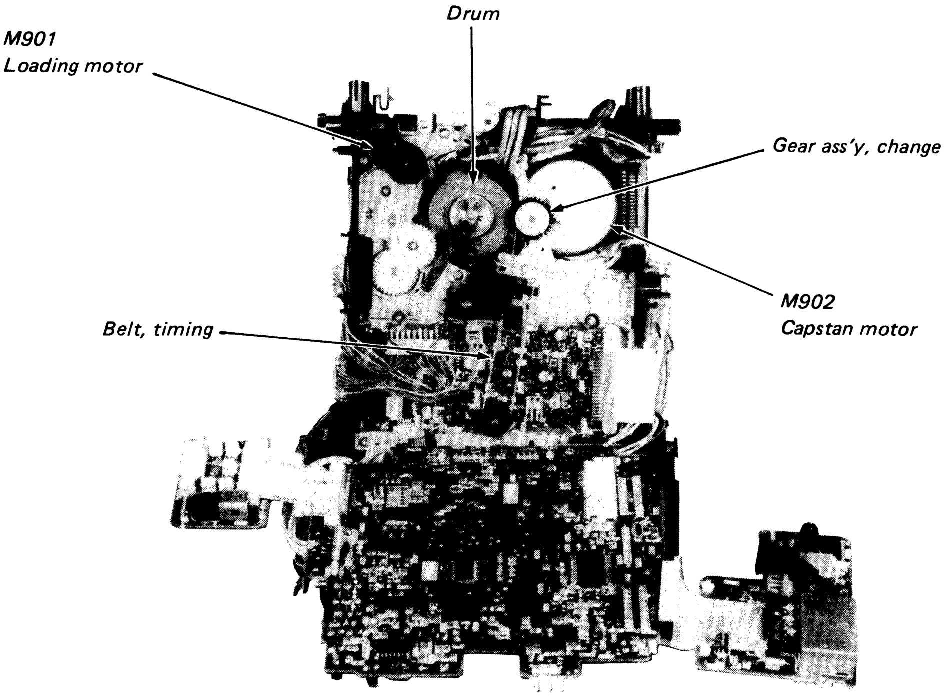
1) Open the ME-4 board by referring to 2-23.
2) Remove three solders in the 🅐 section and remove the shield plate O ❶.
3) Remove connector CN672 (white) ❷.
4) Remove four screws ❸ and loose two screws ❹.
5) Shift the CP-18 board ❺ in the direction of arrow 🅑 and remove two screws ❹ from two slots ❻.
6) Open the CP-18 board ❺ in the direction of arrow 🅒.


❻ Slots
❸ Screw
❹ Screws
❷ Connector CN672 (white) 9P, CG-1 board
🅑
🅒
❸ Screw
❶ Shield plate O
❸ Screws
🅐

2-25. INTERNAL VIEW



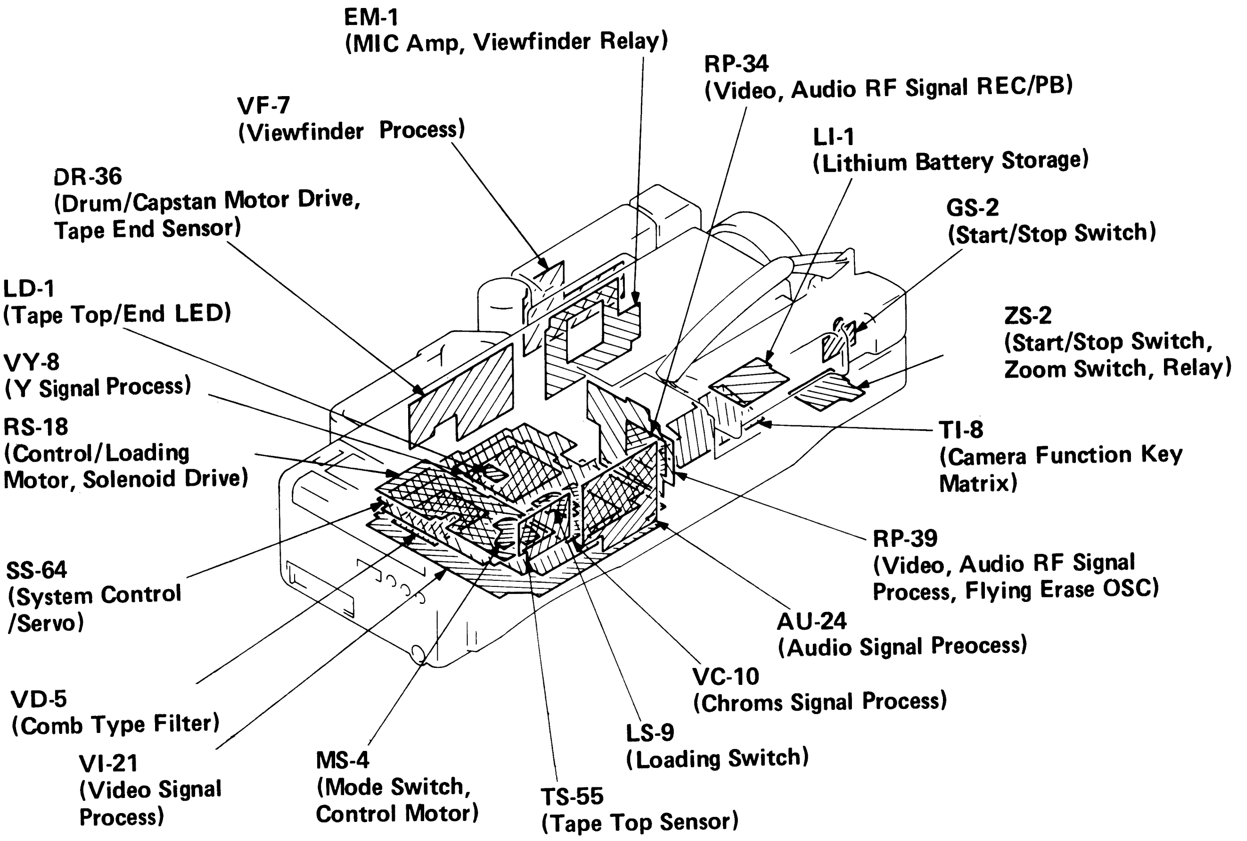
Tape end sensor
Capstan shaft
S reel
Drum
T reel
PM901
Brake solenoid
M906
F motor
M903
Control motor
Pinch roller
Loading ring
Tape top/end LED'
M901
Loading motor
Tape top sensor

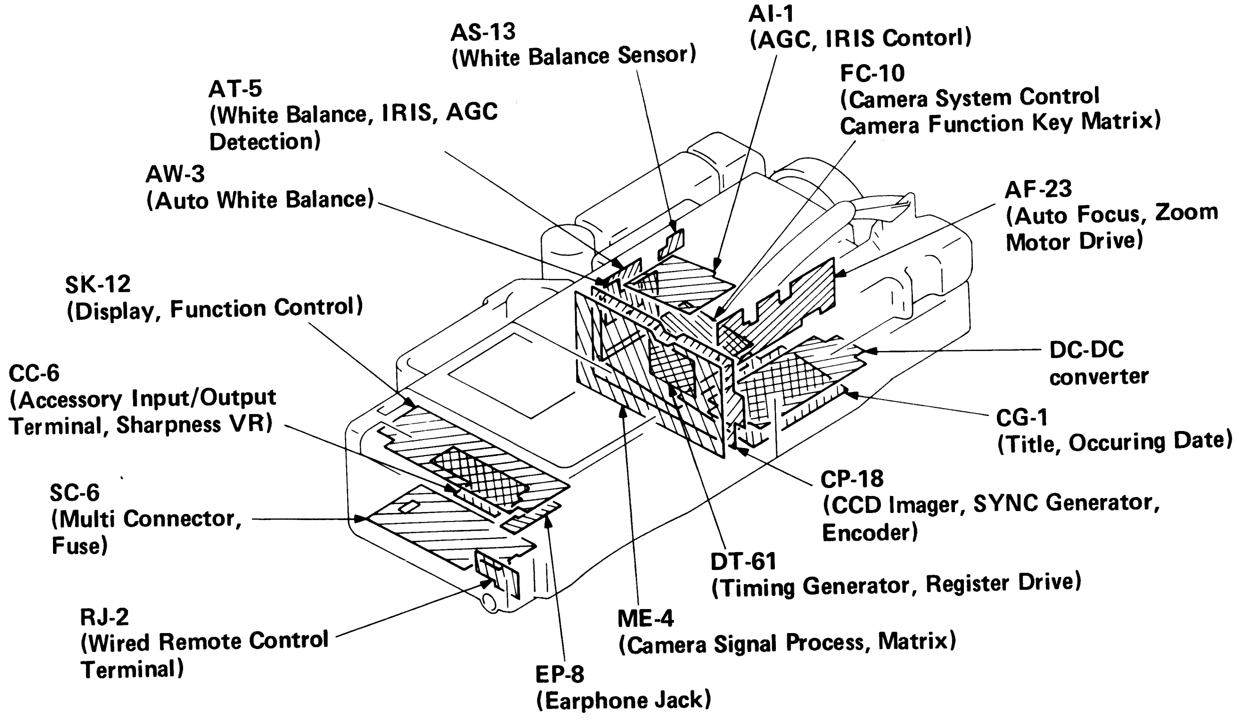


Drum
M901
Loading motor
Gear ass'y, change
M902
Capstan motor
Belt, timing

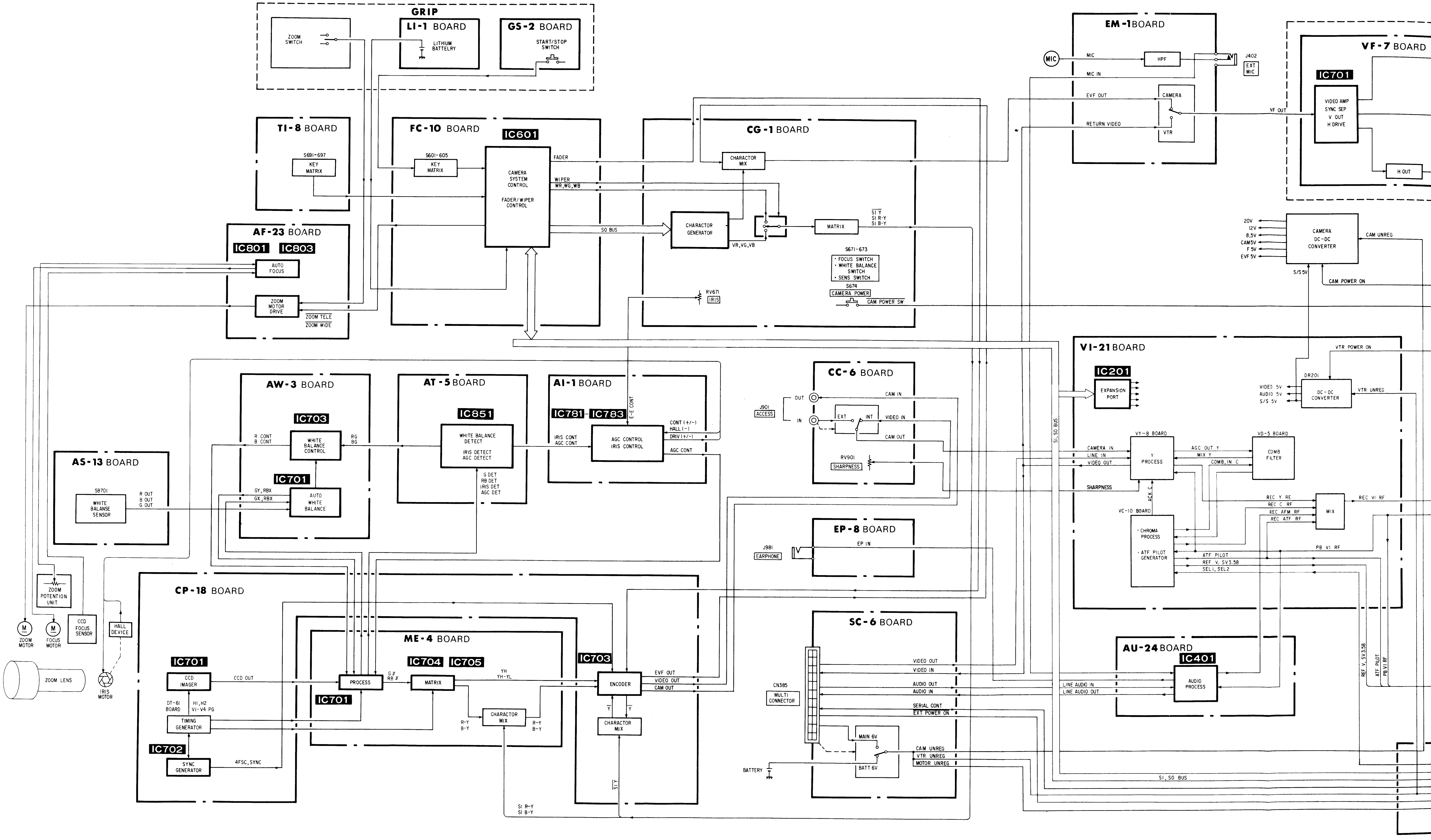
SECTION 3
DIAGRAMS

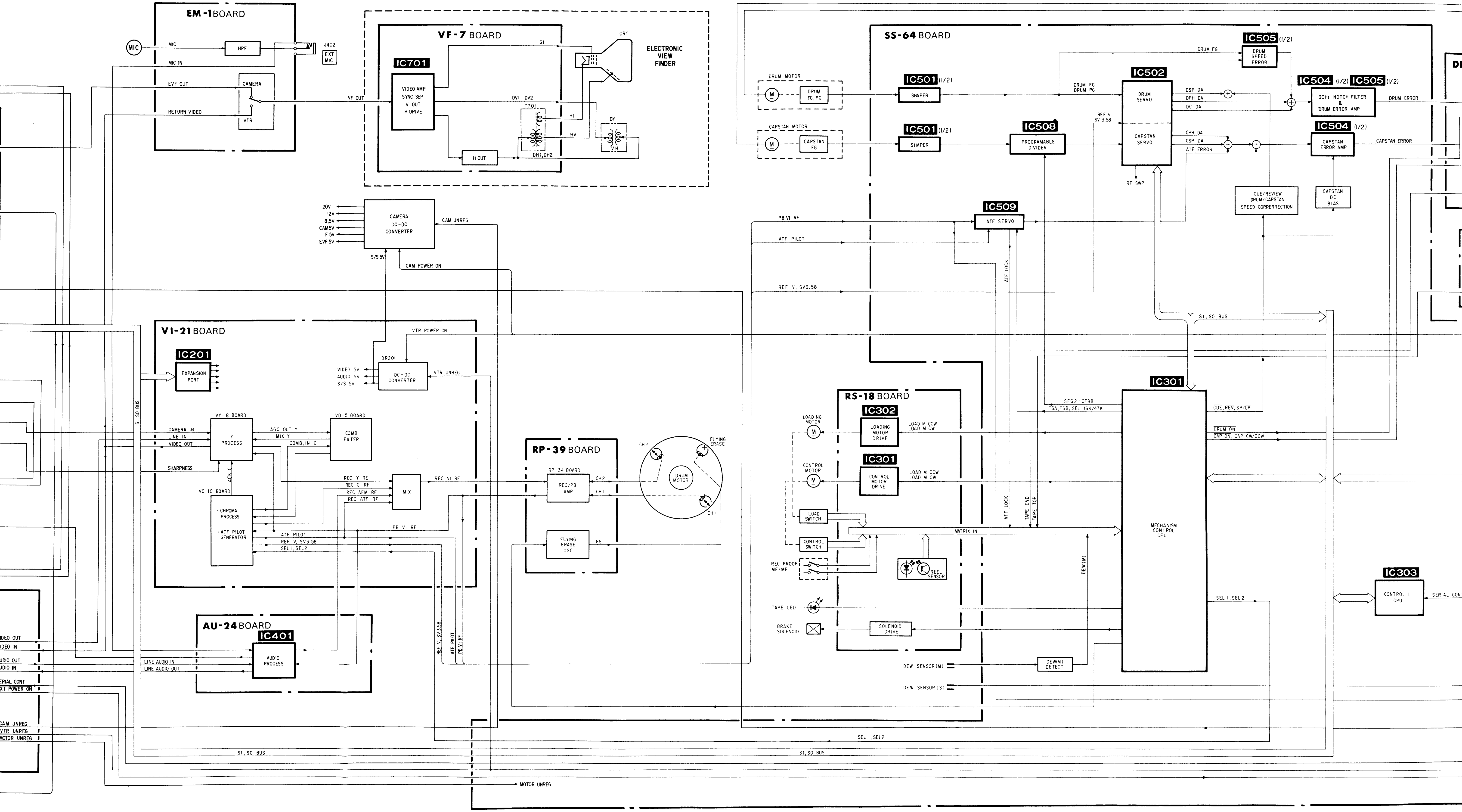
3-1. CIRCUIT BOARDS LOCATION

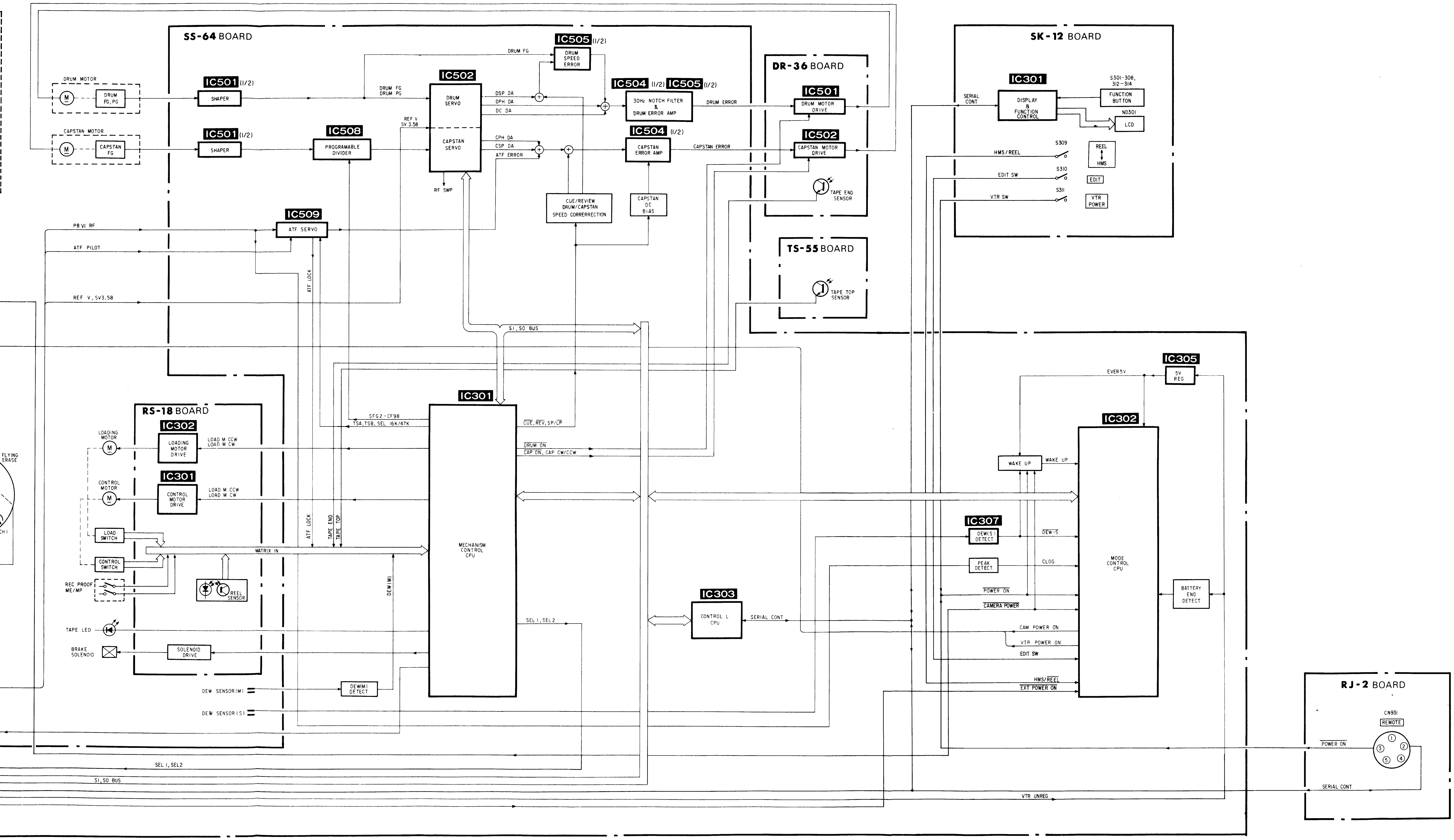

EM-1
(MIC Amp, Viewfinder Relay)
RP-34
(Video, Audio RF Signal REC/PB)
VF-7
(Viewfinder Process)
LI-1
(Lithium Battery Storage)
DR-36
(Drum/Capstan Motor Drive,
Tape End Sensor)
GS-2
(Start/Stop Switch)
LD-1
(Tape Top/End LED)
ZS-2
(Start/Stop Switch,
Zoom Switch, Relay)
VY-8
(Y Signal Process)
RS-18
(Control/Loading
Motor, Solenoid Drive)
TI-8
(Camera Function Key
Matrix)
RP-39
(Video, Audio RF Signal
Process, Flying Erase OSC)
SS-64
(System Control
/Servo)
AU-24
(Audio Signal Preocess)
VC-10
(Chroms Signal Process)
VD-5
(Comb Type Filter)
LS-9
(Loading Switch)
VI-21
(Video Signal
Process)
MS-4
(Mode Switch,
Control Motor)
TS-55
(Tape Top Sensor)


AS-13
(White Balance Sensor)
AI-1
(AGC, IRIS Contorl)
FC-10
(Camera System Control
Camera Function Key Matrix)
AT-5
(White Balance, IRIS, AGC
Detection)
AW-3
(Auto White Balance)
AF-23
(Auto Focus, Zoom
Motor Drive)
SK-12
(Display, Function Control)
DC-DC
converter
CC-6
(Accessory Input/Output
Terminal, Sharpness VR)
CG-1
(Title, Occuring Date)
SC-6
(Multi Connector,
Fuse)
CP-18
(CCD Imager, SYNC Generator,
Encoder)
DT-61
(Timing Generator, Register Drive)
RJ-2
(Wired Remote Control
Terminal)
ME-4
(Camera Signal Process, Matrix)
EP-8
(Earphone Jack)

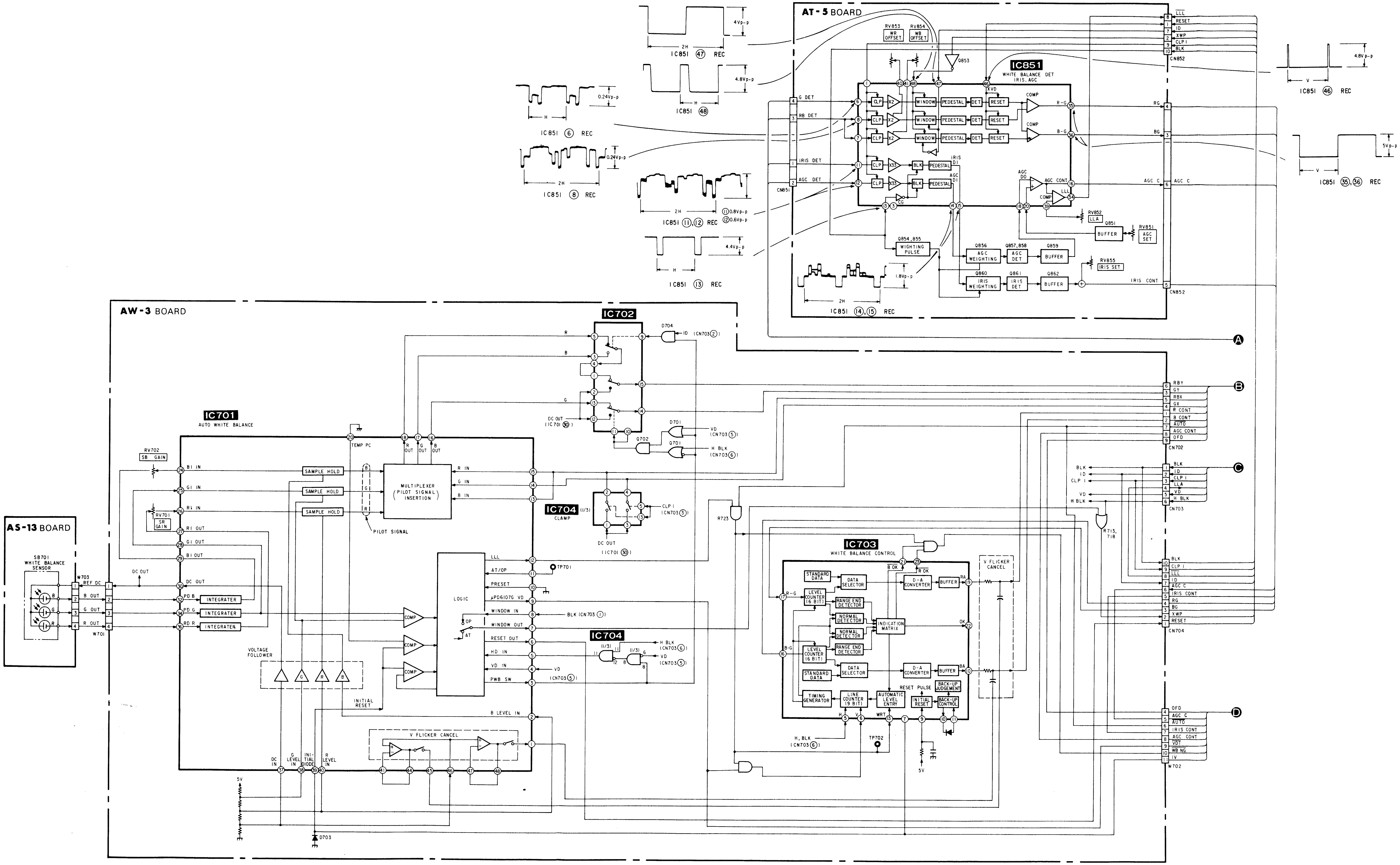
3-2. OVERALL BLOCK DIAGRAM


GRIP
ZOOM SWITCH
LI-1 BOARD
LITHIUM BATTELRY
GS-2 BOARD
START/STOP SWITCH
TI-8 BOARD
S691-697
KEY MATRIX
FC-10 BOARD
IC601
S601-605
KEY MATRIX
CAMERA SYSTEM CONTROL
FADER/WIPER CONTROL
FADER
WIPER
WR,WG,WB
SO BUS
CG-1 BOARD
CHARACTOR MIX
CHARACTOR GENERATOR
VR,VG,VB
MATRIX
SI Y
SI R-Y
SI B-Y
S671-673
· FOCUS SWITCH
· WHITE BALANCE SWITCH
· SENS SWITCH
S674
CAMERA POWER
CAM POWER SW
RV671
IRIS
AF-23 BOARD
IC801
IC803
AUTO FOCUS
ZOOM MOTOR DRIVE
ZOOM TELE
ZOOM WIDE
AW-3 BOARD
IC703
R CONT
B CONT
WHITE BALANCE CONTROL
RG
BG
IC701
GY,RBX
GX,RBX
AUTO WHITE BALANCE
AT-5 BOARD
IC851
WHITE BALANCE DETECT
IRIS DETECT
AGC DETECT
G DET
RB DET
IRIS DET
AGC DET
AI-1 BOARD
IC781
IC783
E-E CONT
IRIS CONT
AGC CONT
AGC CONTROL
IRIS CONTROL
CONT (+/-)
HALL (-)
DRIV (+/-)
AGC CONT
AS-13 BOARD
S8701
WHITE BALANSE SENSOR
R OUT
B OUT
G OUT
ZOOM POTENTION UNIT
CCD FOCUS SENSOR
HALL DEVICE
M
ZOOM MOTOR
M
FOCUS MOTOR
ZOOM LENS
IRIS MOTOR
CP-18 BOARD
IC701
CCD IMAGER
CCD OUT
DT-61 BOARD
H1,H2
V1-V4 PG
TIMING GENERATOR
IC702
SYNC GENERATOR
4FSC,SYNC
ME-4 BOARD
IC704
IC705
PROCESS
IC701
G γ
RB γ
MATRIX
YH
YH-YL
R-Y
B-Y
CHARACTOR MIX
R-Y
B-Y
IC703
ENCODER
EVF OUT
VIDEO OUT
CAM OUT
Y
Y
CHARACTOR MIX
SI Y
SI R-Y
SI B-Y
EM-1BOARD
MIC
MIC
HPF
J402
EXT MIC
MIC IN
EVF OUT
CAMERA
RETURN VIDEO
VTR
VF OUT
VF-7 BOARD
IC701
VIDEO AMP
SYNC SEP
V OUT
H DRIVE
H OUT
20V
12V
8.5V
CAM5V
F 5V
EVF 5V
CAMERA DC-DC CONVERTER
CAM UNREG
S/S 5V
CAM POWER ON
CC-6 BOARD
J901
ACCESS
OUT
IN
CAM IN
EXT
INT
VIDEO IN
CAM OUT
RV901
SHARPNESS
EP-8 BOARD
J981
EARPHONE
EP IN
SC-6 BOARD
CN385
MULTI CONNECTOR
VIDEO OUT
VIDEO IN
AUDIO OUT
AUDIO IN
SERIAL CONT
EXT POWER ON
MAIN 6V
BATT 6V
BATTERY
CAM UNREG
VTR UNREG
MOTOR UNREG
SI, SO BUS
SI, SO BUS
VI-21BOARD
IC201
EXPANSION PORT
VTR POWER ON
DR201
VIDEO 5V
AUDIO 5V
S/S 5V
DC-DC CONVERTER
VTR UNREG
VY-8 BOARD
CAMERA IN
LINE IN
VIDEO OUT
Y PROCESS
AGC OUT Y
MIX Y
COMB, IN C
VD-5 BOARD
COMB FILTER
SHARPNESS
ACK C
VC-10 BOARD
· CHROMA PROCESS
· ATF PILOT GENERATOR
REC Y RF
REC C RF
REC AFM RF
REC ATF RF
MIX
REC VI RF
PB VI RF
ATF PILOT
REF V, SV3.58
SEL1, SEL2
AU-24 BOARD
IC401
AUDIO PROCESS
LINE AUDIO IN
LINE AUDIO OUT
REF V, SV3.58
ATF PILOT
PB VI RF

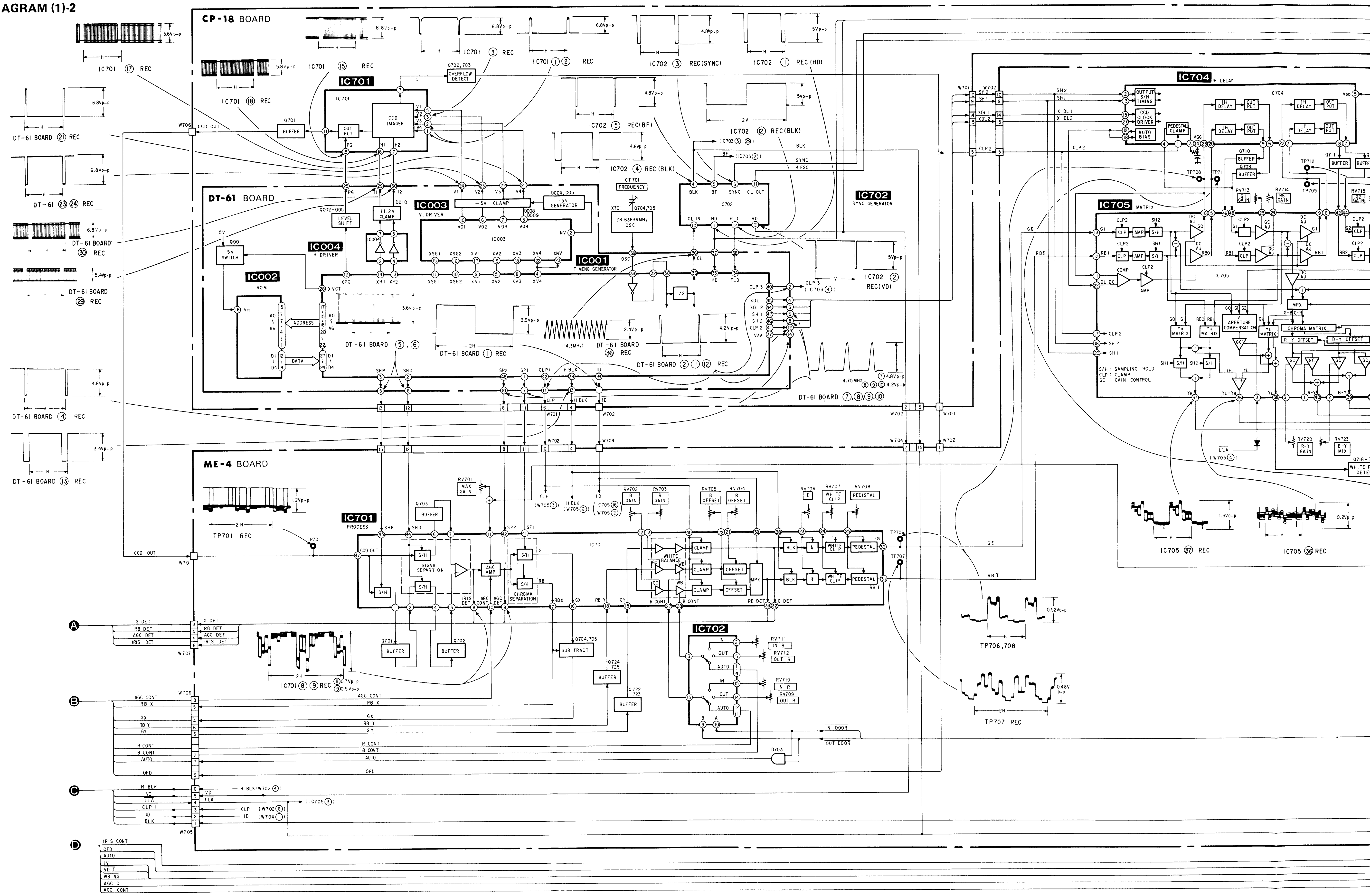

EM-1 BOARD
MIC
MIC
HPF
MIC IN
J402
EXT MIC
EVF OUT
CAMERA
RETURN VIDEO
VTR
VF OUT
VF-7 BOARD
IC701
VIDEO AMP
SYNC SEP
V OUT
H DRIVE
G1
CRT
ELECTRONIC VIEW FINDER
DV1 DV2
T701
H1
HV
DY
VH
H OUT
DH1, DH2
20V
12V
8.5V
CAM5V
F 5V
EVF 5V
CAMERA DC-DC CONVERTER
CAM UNREG
S/S 5V
CAM POWER ON
VI-21 BOARD
IC201
EXPANSION PORT
VTR POWER ON
DR201
VIDEO 5V
AUDIO 5V
S/S 5V
DC-DC CONVERTER
VTR UNREG
S1, S0 BUS
VY-8 BOARD
CAMERA IN
LINE IN
VIDEO OUT
Y PROCESS
AGC OUT Y
MIX Y
COMB, IN C
VD-5 BOARD
COMB FILTER
SHARPNESS
ACK C
VC-10 BOARD
· CHROMA PROCESS
· ATF PILOT GENERATOR
REC Y RE
REC C RF
REC AFM RF
REC ATF RF
MIX
REC VI RF
PB VI RF
ATF PILOT
REF V, SV3.58
SEL1, SEL2
RP-39 BOARD
RP-34 BOARD
REC/PB AMP
CH2
CH1
FLYING ERASE OSC
FE
CH2
FLYING ERASE
DRUM MOTOR
CH1
AU-24 BOARD
IC401
AUDIO PROCESS
LINE AUDIO IN
LINE AUDIO OUT
IDEO OUT
IDEO IN
UDIO OUT
UDIO IN
ERIAL CONT
XT POWER ON
CAM UNREG
VTR UNREG
MOTOR UNREG
REF V, SV3.58
ATF PILOT
PB VI RF
S1, S0 BUS
MOTOR UNREG
SS-64 BOARD
DRUM MOTOR
M
DRUM FG, PG
CAPSTAN MOTOR
M
CAPSTAN FG
IC501 (1/2)
SHAPER
IC501 (1/2)
SHAPER
IC508
PROGRAMABLE DIVIDER
DRUM FG
DRUM PG
REF V
SV 3.58
IC502
DRUM SERVO
CAPSTAN SERVO
DSP DA
DPH DA
DC DA
CPH DA
CSP DA
ATF ERROR
RF SWP
DRUM FG
IC505 (1/2)
DRUM SPEED ERROR
IC504 (1/2) IC505 (1/2)
30Hz NOTCH FILTER & DRUM ERROR AMP
DRUM ERROR
IC504 (1/2)
CAPSTAN ERROR AMP
CAPSTAN ERROR
CUE/REVIEW DRUM/CAPSTAN SPEED CORRERRECTION
CAPSTAN DC BIAS
DI
IC509
ATF SERVO
PB VI RF
ATF PILOT
ATF LOCK
REF V, SV3.58
S1, S0 BUS
RS-18 BOARD
IC302
LOADING MOTOR
M
LOADING MOTOR DRIVE
LOAD M CCW
LOAD M CW
CONTROL MOTOR
M
IC301
CONTROL MOTOR DRIVE
LOAD M CCW
LOAD M CW
LOAD SWITCH
CONTROL SWITCH
MATRIX IN
REC PROOF ME/MP
REEL SENSOR
TAPE LED
BRAKE SOLENOID
SOLENOID DRIVE
ATF LOCK
TAPE END
TAPE TOP
DEW(M)
DEW SENSOR(M)
DEW(M) DETECT
DEW SENSOR(S)
IC301
SFG2-CF98
TSA, TSB, SEL 16K/47K
CUE, REV, SP/LP
DRUM ON
CAP ON, CAP CW/CCW
MECHANISM CONTROL CPU
SEL1, SEL2
IC303
CONTROL L CPU
SERIAL CONT
SEL1, SEL2
S1, S0 BUS

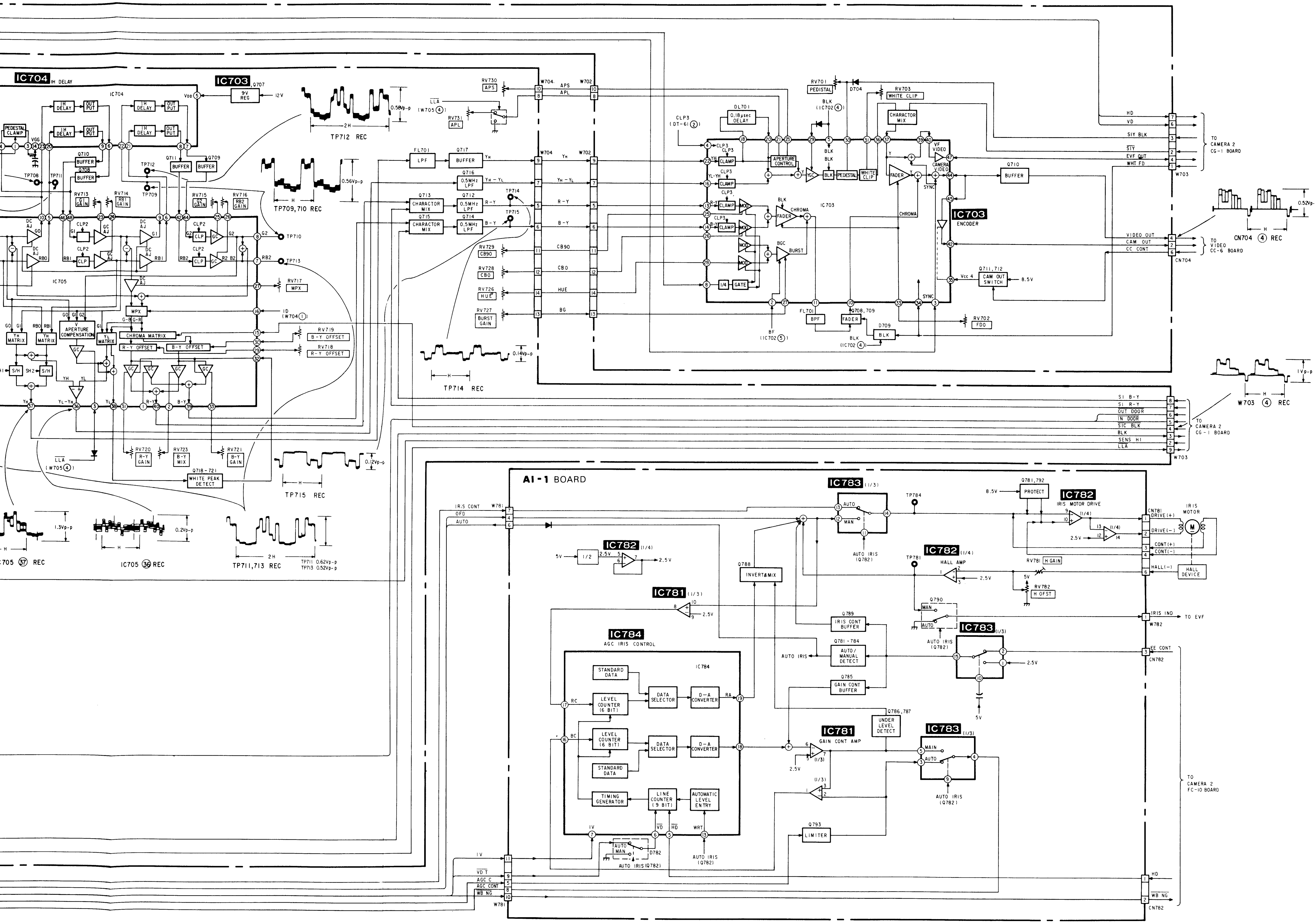

SS-64 BOARD
DRUM MOTOR
M
DRUM FG, PG
CAPSTAN MOTOR
CAPSTAN FG
IC501 (1/2)
SHAPER
IC501 (1/2)
SHAPER
IC508
PROGRAMABLE DIVIDER
DRUM FG
DRUM PG
IC502
DRUM SERVO
CAPSTAN SERVO
REF V
SV 3.58
RF SWP
DRUM FG
IC505 (1/2)
DRUM SPEED ERROR
DSP DA
DPH DA
DC DA
CPH DA
CSP DA
ATF ERROR
IC504 (1/2) IC505 (1/2)
30Hz NOTCH FILTER & DRUM ERROR AMP
DRUM ERROR
IC504 (1/2)
CAPSTAN ERROR AMP
CAPSTAN ERROR
CUE/REVIEW DRUM/CAPSTAN SPEED CORRERRECTION
CAPSTAN DC BIAS
IC509
ATF SERVO
PB VI RF
ATF PILOT
REF V, SV3.58
ATF LOCK
SI, SO BUS
DR-36 BOARD
IC501
DRUM MOTOR DRIVE
IC502
CAPSTAN MOTOR DRIVE
TAPE END SENSOR
TS-55 BOARD
TAPE TOP SENSOR
SK-12 BOARD
IC301
DISPLAY & FUNCTION CONTROL
SERIAL CONT
S301-308, 312-314
FUNCTION BUTTON
ND301
LCD
S309
HMS/REEL
REEL
HMS
S310
EDIT SW
EDIT
S311
VTR SW
VTR POWER
RS-18 BOARD
LOADING MOTOR
IC302
LOADING MOTOR DRIVE
LOAD M CCW
LOAD M CW
CONTROL MOTOR
IC301
CONTROL MOTOR DRIVE
LOAD M CCW
LOAD M CW
LOAD SWITCH
CONTROL SWITCH
REC PROOF ME/MP
REEL SENSOR
TAPE LED
BRAKE SOLENOID
SOLENOID DRIVE
FLYING ERASE
CH I
SFG2-CF98
TSA, TSB, SEL 16K/47K
ATF LOCK
TAPE END
TAPE TOP
MATRIX IN
DEW(M)
IC301
MECHANISM CONTROL CPU
CUE, REV, SP/LP
DRUM ON
CAP ON, CAP CW/CCW
SEL 1, SEL 2
DEW SENSOR(M)
DEW(M) DETECT
DEW SENSOR(S)
IC303
CONTROL L CPU
SERIAL CONT
SEL 1, SEL2
SI, SO BUS
IC305
5V REG
EVER 5V
IC302
MODE CONTROL CPU
WAKE UP
WAKE UP
IC307
DEW(S) DETECT
DEW-S
PEAK DETECT
CLOG
POWER ON
CAMERA POWER
CAM POWER ON
VTR POWER ON
EDIT SW
HMS/REEL
EXT POWER ON
BATTERY END DETECT
RJ-2 BOARD
CN931
REMOTE
POWER ON
SERIAL CONT
VTR UNREG
① ② ③ ④ ⑤

-3. CAMERA BLOCK DIAGRAM (1)-1


AT-5 BOARD
IC851
WHITE BALANCE DET
IRIS, AGC
RV853
WB OFFSET
RV854
WB OFFSET
Q853
G DET
RB DET
IRIS DET
AGC DET
CN851
CLP
X2
WINDOW
PEDESTAL
DET
RESET
COMP
R-G
B-G
X33
BLK
IRIS DI
AGC DI
AGC DO
AGC CONT
LLL
CG
XVD
RV852
LLA
Q851
BUFFER
RV851
AGC SET
Q854, 855
WEIGHTING PULSE
Q856
AGC WEIGHTING
Q857, 858
AGC DET
Q859
BUFFER
RV855
IRIS SET
Q860
IRIS WEIGHTING
Q861
IRIS DET
Q862
BUFFER
IRIS CONT
CN852
LLL
RESET
ID
XWP
CLP I
BLK
RG
BG
AGC C
IC851 (47) REC
4Vp-p
2H
IC851 (48) REC
4.8Vp-p
H
IC851 (6) REC
0.24Vp-p
IC851 (8) REC
0.24Vp-p
IC851 (11),(12) REC
(11)0.8Vp-p
(12)0.6Vp-p
IC851 (13) REC
4.4Vp-p
IC851 (14),(15) REC
1.8Vp-p
IC851 (46) REC
4.8Vp-p
V
IC851 (35),(36) REC
5Vp-p
A
B
C
D
AW-3 BOARD
IC702
D704
ID (CN703(2))
R
B
G
DC OUT (IC701 (30))
D701
VD (CN703(5))
Q701
H BLK (CN703(6))
Q702
IC701
AUTO WHITE BALANCE
TEMP PC
R OUT
G OUT
B OUT
RV702
SB GAIN
BI IN
GI IN
RI IN
RI OUT
GI OUT
BI OUT
DC OUT
PD B
PD G
PD R
SAMPLE HOLD
MULTIPLEXER (PILOT SIGNAL INSERTION)
R IN
G IN
B IN
PILOT SIGNAL
RV701
SR GAIN
INTEGRATER
COMP
LOGIC
OP
AT
LLL
AT/OP
PRESET
μPD6107G VD
WINDOW IN
WINDOW OUT
RESET OUT
HD IN
VD IN
PWB SW
B LEVEL IN
TP701
BLK (CN703(1))
IC704 (1/3)
CLAMP
CLP I (CN703(3))
DC OUT (IC701 (30))
IC704
H BLK (CN703(6))
VD (CN703(5))
VD (CN703(5))
VOLTAGE FOLLOWER
INITIAL RESET
V FLICKER CANCEL
DC IN
G LEVEL IN
INITIAL DIODE
R LEVEL IN
5V
D703
DC OUT
AS-13 BOARD
SB701
WHITE BALANCE SENSOR
W703
REF DC
B OUT
G OUT
R OUT
W701
R723
IC703
WHITE BALANCE CONTROL
B OK
R OK
STANDARD DATA
DATA SELECTOR
D-A CONVERTER
BUFFER
LEVEL COUNTER (6 BIT)
RANGE END DETECTOR
NORMAL DETECTOR
INDICATION MATRIX
OK
TIMING GENERATOR
LINE COUNTER (9 BIT)
AUTOMATIC LEVEL ENTRY
RESET PULSE
INITIAL RESET
BACK-UP JUDGEMENT
BACK-UP CONTROL
WRT
H, BLK (CN703(6))
TP702
5V
V FLICKER CANCEL
R713, 718
BLK
ID
CLP I
VD
H BLK
CN702
RBY
GY
RBX
GX
R CONT
B CONT
AUTO
AGC CONT
OFD
CN703
LLA
CN704
IRIS CONT
XWP
RESET
W702
VDT
WB NG
IV

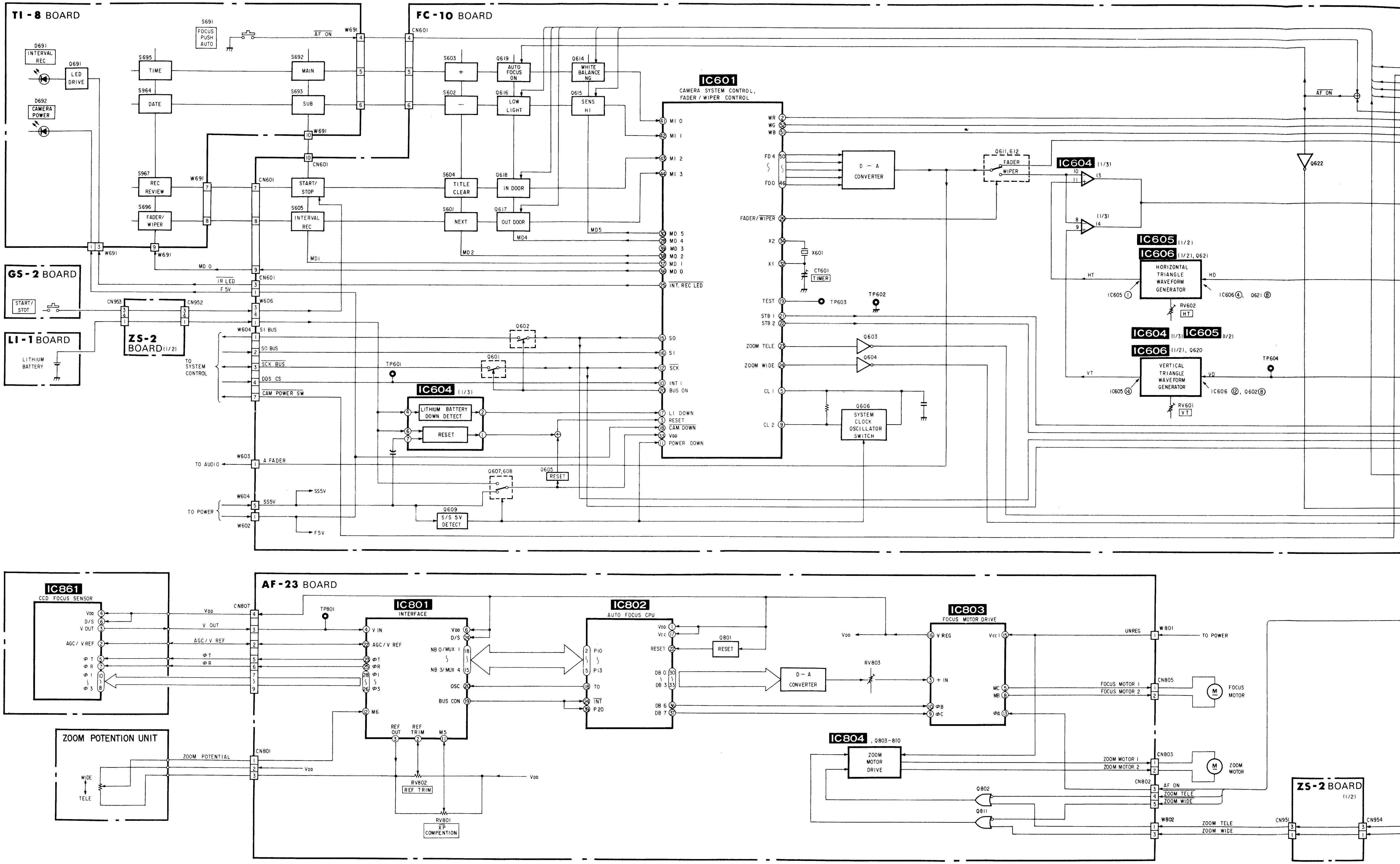
3-4. CAMERA BLOCK DIAGRAM (1)-2

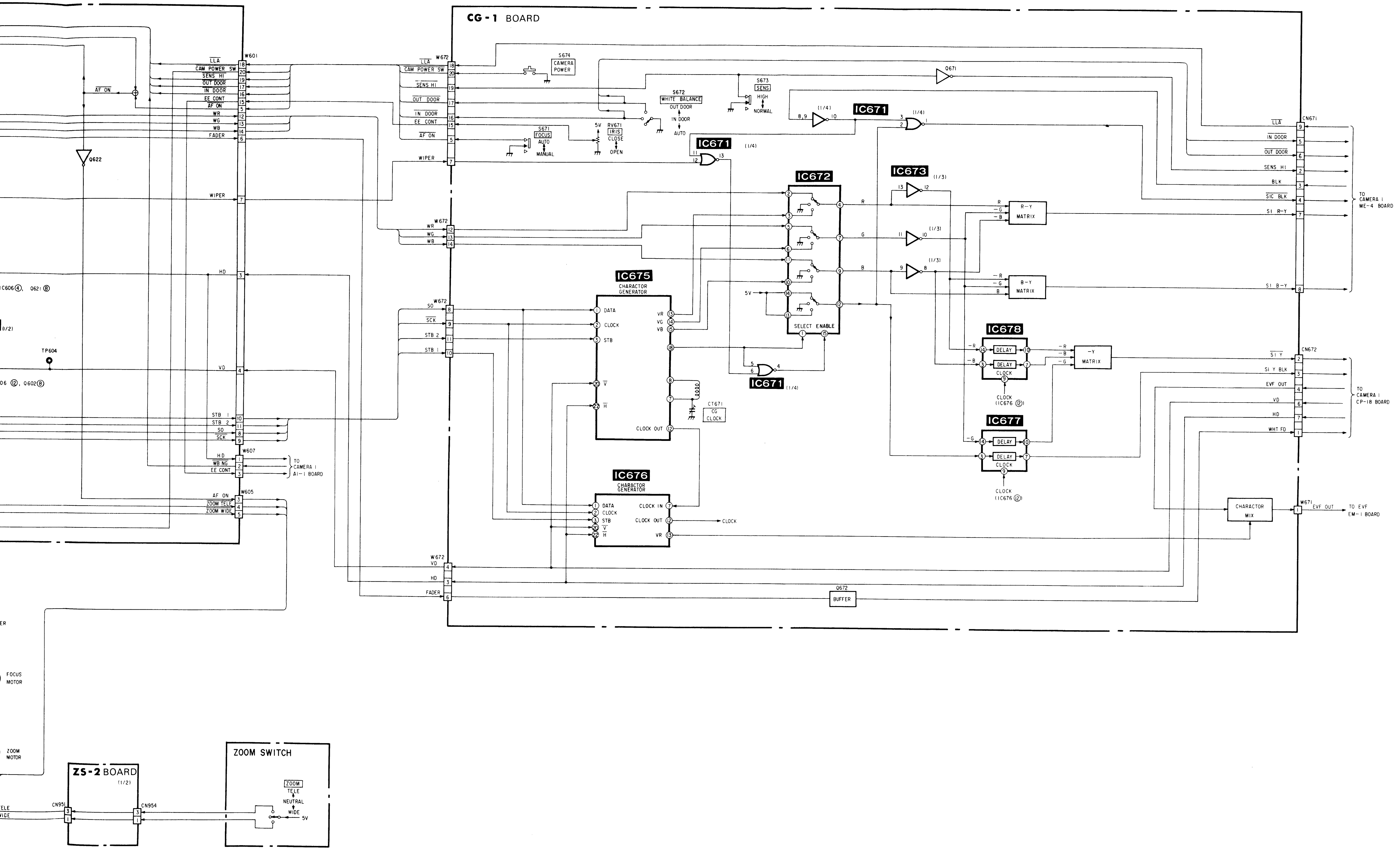

CP-18 BOARD
DT-61 BOARD
ME-4 BOARD
IC701
CCD IMAGER
OUT PUT
Q701 BUFFER
Q702,703 OVERFLOW DETECT
IC003 V. DRIVER
IC004 H DRIVER
IC002 ROM
IC001 TIMENG GENERATOR
IC702 SYNC GENERATOR
LEVEL SHIFT
+1.2V CLAMP
-5V CLAMP
-5V GENERATOR
5V SWITCH
ADDRESS
DATA
CT701 FREQUENCY
X701 28.63636MHz OSC
1/2
IC704 1H DELAY
OUTPUT S/H TIMING
CCD CLOCK DRIVER
AUTO BIAS
PEDESTAL CLAMP
1H DELAY
OUT PUT
IC705 MATRIX
CLP AMP S/H
COMP
YH MATRIX
YL MATRIX
APERTURE COMPENSATION
CHROMA MATRIX
R-Y OFFSET
B-Y OFFSET
MPX
S/H : SAMPLING HOLD
CLP : CLAMP
GC : GAIN CONTROL
IC701 PROCESS
SIGNAL SEPARTION
AGC AMP
CHROMA SEPARATION
WHITE BALANCE
CLAMP
OFFSET
BLK
WHITE CLIP
PEDESTAL
SUB TRACT
IC702
RV701 MAX GAIN
RV702 B GAIN
RV703 R GAIN
RV705 B OFFSET
RV704 R OFFSET
RV706
RV707 WHITE CLIP
RV708 PEDESTAL
RV711 IN B
RV712 OUT B
RV710 IN R
RV709 OUT R
RV713 G1 GAIN
RV714 RB1 GAIN
RV720 R-Y GAIN
RV723 B-Y MIX
Q718 WHITE DETE
TP701
TP706
TP707
TP708
TP709
TP711
TP712
IC701 ⑰ REC
IC701 ⑮ REC
IC701 ⑱ REC
IC701 ③ REC
IC701 ①② REC
IC702 ③ REC(SYNC)
IC702 ① REC(HD)
IC702 ⑤ REC(BF)
IC702 ⑫ REC(BLK)
IC702 ④ REC(BLK)
IC702 ② REC(VD)
DT-61 BOARD ㉑ REC
DT-61 ㉓㉔ REC
DT-61 BOARD ㉚ REC
DT-61 BOARD ㉙ REC
DT-61 BOARD ⑭ REC
DT-61 BOARD ⑬ REC
DT-61 BOARD ⑤,⑥
DT-61 BOARD ① REC
DT-61 BOARD ㊱ REC
DT-61 BOARD ②⑪⑫ REC
DT-61 BOARD ⑦,⑧,⑨,⑩
TP701 REC
IC701 ⑧ ⑨ REC
IC705 ㊲ REC
IC705 ㊱ REC
TP706,708
TP707 REC
A
B
C
D
G DET
RB DET
AGC DET
IRIS DET
AGC CONT
RB X
GX
RB Y
GY
R CONT
B CONT
AUTO
OFD
H BLK
VD
LLA
CLP 1
ID
BLK
IRIS CONT
IV
VD Y
WB NG
AGC C
IN DOOR
OUT DOOR
D703
W701
W702
W704
W705
W706
W707



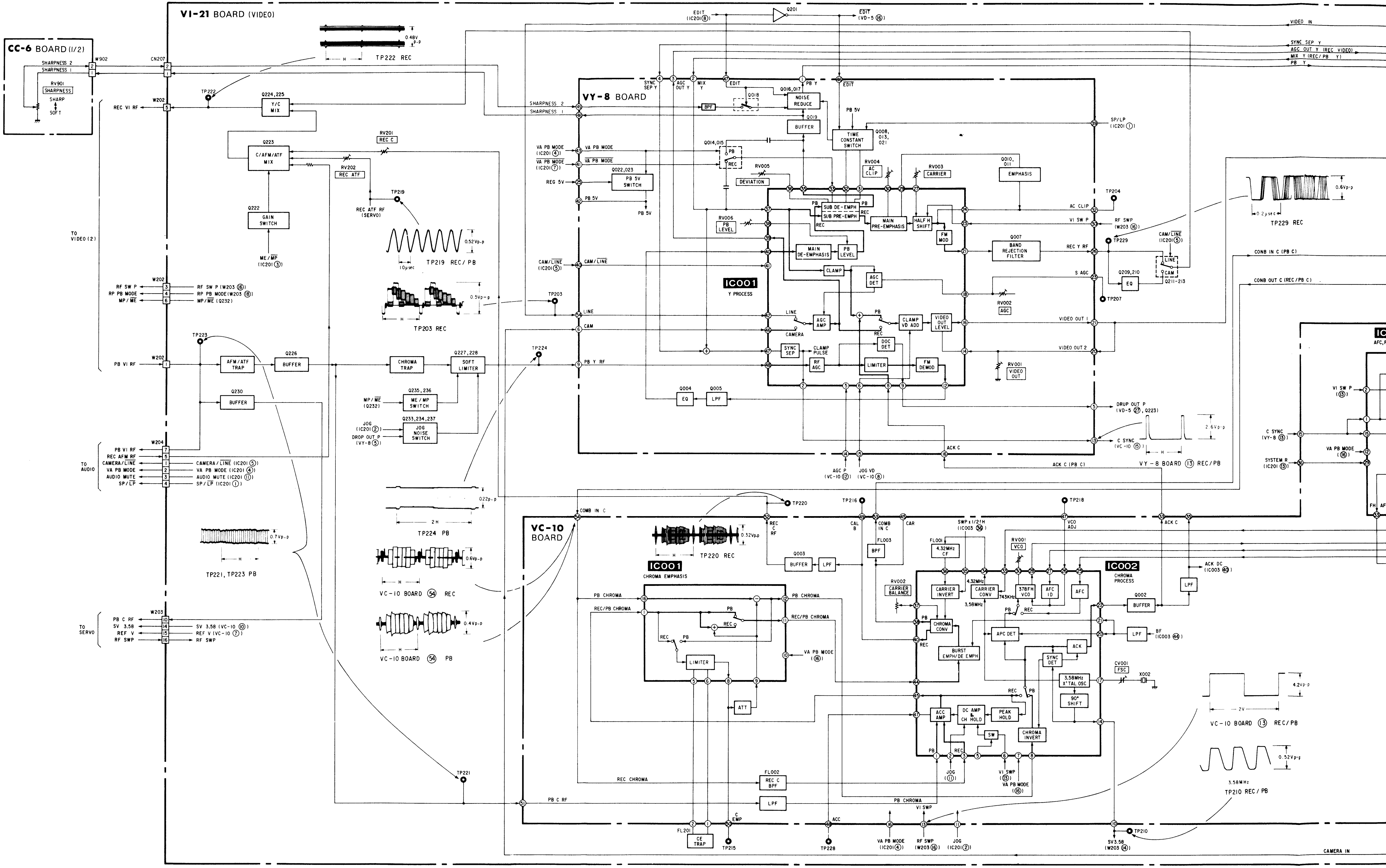
IC704 1H DELAY
IC703
9V REG
12V
Q707
PEDESTAL CLAMP
1H DELAY
OUT PUT
BUFFER
Q710
Q708
Q709
Q711
TP712
TP709
TP708
TP711
TP710
TP713
RV713 G1 GAIN
RV714 RB1 GAIN
RV715 G2 GAIN
RV716 RB2 GAIN
DC AJ
GC AJ
CLP2
IC705
RV717 MPX
MPX
G-B/G-R
ID (W704 ①)
V APERTURE COMPENSATION
Y H MATRIX
Y L MATRIX
CHROMA MATRIX
R-Y OFFSET
B-Y OFFSET
RV719 B-Y OFFSET
RV718 R-Y OFFSET
S/H
SH2
YH
YL
YL-YH
R-Y
B-Y
RV720 R-Y GAIN
RV723 B-Y MIX
RV721 B-Y GAIN
Q718-721 WHITE PEAK DETECT
LLA (W705 ④)
1.3Vp-p
0.2Vp-p
IC705 ㊲ REC
IC705 ㊱ REC
2H
TP711,713 REC
TP711 0.62Vp-p
TP713 0.52Vp-p
0.58Vp-p
TP712 REC
0.56Vp-p
TP709,710 REC
0.14Vp-p
TP714 REC
0.12Vp-p
TP715 REC
RV730 APS
RV731 APL
LLA (W705 ④)
FL701 LPF
Q717 BUFFER
Q716 0.5MHz LPF
Q713 CHARACTOR MIX
Q712 0.5MHz LPF
Q715 CHARACTOR MIX
Q714 0.5MHz LPF
TP714
TP715
RV729 CB90
RV728 CB0
RV726 HUE
RV727 BURST GAIN
W704
W702
APS
APL
YH
YH-YL
R-Y
B-Y
CB90
CB0
HUE
BG
CLP3 (DT-61 ②)
DL701 0.18μsec DELAY
CLP3
CLAMP
APERTURE CONTROL
RV701 PEDISTAL
D704
BLK (IC702 ④)
RV703 WHITE CLIP
CHARACTOR MIX
YGC
BLK
PEDISTAL
WHITE CLIP
FADER
Y
SYNC
VF VIDEO
CAMERA VIDEO
CHROMA
IC703 ENCODER
MOD
BURST
BGC
1/4
GATE
BF (IC702 ⑤)
FL701 BPF
Q708,709 FADER
BLK (IC702 ④)
D709 BLK
RV702 FDO
Q710 BUFFER
Q711,712 CAM OUT SWITCH
Vcc 4
8.5V
HD
VD
SIY BLK
SIY
EVF OUT
WHT FD
W703
TO CAMERA 2 CG-1 BOARD
0.52Vp-p
CN704 ④ REC
VIDEO OUT
CAM OUT
CC CONT
CN704
TO VIDEO CC-6 BOARD
1Vp-p
W703 ④ REC
SI B-Y
SI R-Y
OUT DOOR
IN DOOR
SIC BLK
BLK
SENS HI
LLA
TO CAMERA 2 CG-1 BOARD
AI-1 BOARD
IRIS CONT
OFD
AUTO
W781
IC783 (1/3)
AUTO
MAN
AUTO IRIS (Q782)
TP784
Q781,792 PROTECT
8.5V
IC782 IRIS MOTOR DRIVE
(1/4)
2.5V
CN781
DRIVE(+)
DRIVE(-)
CONT(+)
CONT(-)
HALL(-)
IRIS MOTOR
M
HALL DEVICE
IC782 (1/4)
5V
1/2
2.5V
TP781
IC782 (1/4) HALL AMP
RV781 H GAIN
RV782 H OFST
Q788 INVERT&MIX
IC781 (1/3)
Q790
MAN
AUTO
AUTO IRIS (Q782)
IC783 (1/3)
IRIS IND
TO EVF
W782
EE CONT
CN782
Q789 IRIS CONT BUFFER
Q781-784 AUTO/MANUAL DETECT
AUTO IRIS
Q785 GAIN CONT BUFFER
5V
IC784 AGC IRIS CONTROL
IC784
STANDARD DATA
LEVEL COUNTER (6 BIT)
DATA SELECTOR
D-A CONVERTER
RC
BC
RA
TIMING GENERATOR
LINE COUNTER (9 BIT)
AUTOMATIC LEVEL ENTRY
IV
VD
HD
WRT
AUTO MAN
D782
AUTO IRIS (Q782)
Q786,787 UNDER LEVEL DETECT
IC781 GAIN CONT AMP
(1/3)
IC783 (1/3)
MAIN
AUTO
AUTO IRIS (Q782)
Q793 LIMITER
TO CAMERA 2 FC-10 BOARD
IV
VD T
AGC C
AGC CONT
WB NG
W781
HD
WB NG
CN782

3-5. CAMERA BLOCK DIAGRAM (2)

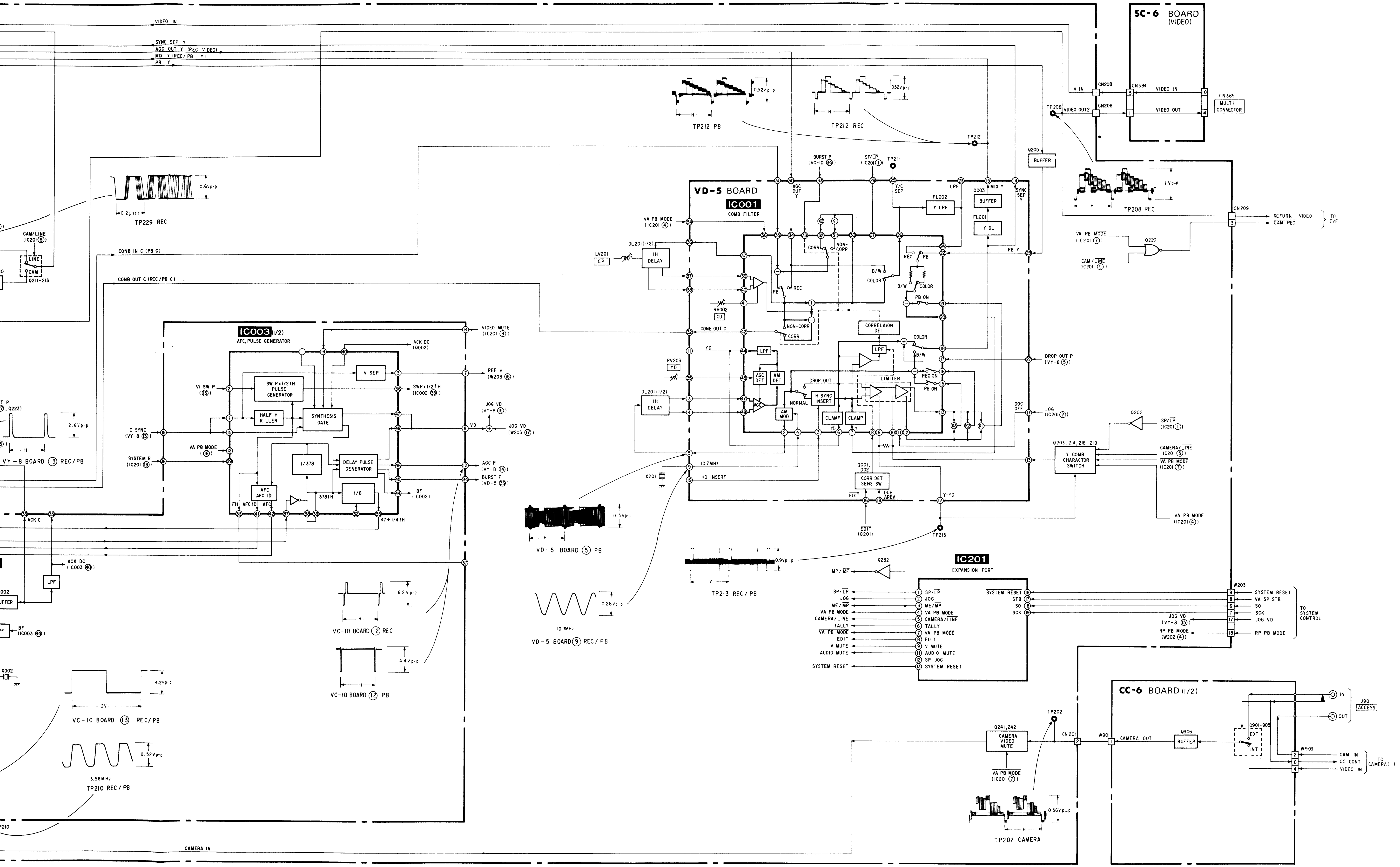

TI-8 BOARD
D691 INTERVAL REC
Q691 LED DRIVE
D692 CAMERA POWER
S691 FOCUS PUSH AUTO
AF ON
W691
S695 TIME
S964 DATE
S692 MAIN
S693 SUB
S967 REC REVIEW
S696 FADER/WIPER
GS-2 BOARD
START/STOP
LI-1 BOARD
LITHIUM BATTERY
ZS-2 BOARD (1/2)
CN953
CN952
FC-10 BOARD
CN601
S603 +
S602 −
Q619 AUTO FOCUS ON
Q616 LOW LIGHT
Q614 WHITE BALANCE NG
Q615 SENS HI
START/STOP
S605 INTERVAL REC
S604 TITLE CLEAR
S601 NEXT
Q618 IN DOOR
Q617 OUT DOOR
IC601
CAMERA SYSTEM CONTROL, FADER/WIPER CONTROL
MI 0
MI 1
MI 2
MI 3
MD 5
MD 4
MD 3
MD 2
MD 1
MD 0
INT. REC LED
IR LED
F 5V
W606
W604
S1 BUS
S0 BUS
SCK BUS
DDS CS
CAM POWER SW
TO SYSTEM CONTROL
S0
S1
SCK
INT 1
BUS ON
L1 DOWN
RESET
CAM DOWN
VDD
POWER DOWN
WR
WG
WB
FD 4
FD0
FADER/WIPER
X2
X1
X601
CT601 TIMER
TEST
TP603
TP602
STB 1
STB 2
ZOOM TELE
ZOOM WIDE
CL 1
CL 2
D−A CONVERTER
Q611, 612 FADER WIPER
IC604 (1/3)
Q603
Q604
Q606 SYSTEM CLOCK OSCILLATOR SWITCH
Q602
Q601
TP601
IC604 (1/3)
LITHIUM BATTERY DOWN DETECT
RESET
W603 A FADER
TO AUDIO
Q605 RESET
Q607, 608
W604 SS5V
TO POWER
W602
F5V
Q609 S/S 5V DETECT
Q622
IC605 (1/2)
IC606 (1/2), Q621
HORIZONTAL TRIANGLE WAVEFORM GENERATOR
HT
HD
IC605 ①
IC606 ④, Q621 ⑧
RV602 HT
IC604 (1/3) IC605 (1/2)
IC606 (1/2), Q620
VERTICAL TRIANGLE WAVEFORM GENERATOR
VT
VD
IC605 ④
IC606 ⑫, Q602 ⑧
RV601 VT
TP604
AF ON
IC861
CCD FOCUS SENSOR
VDD
D/S
V OUT
AGC/V REF
ΦT
ΦR
Φ1
Φ3
ZOOM POTENTION UNIT
WIDE
TELE
AF-23 BOARD
CN807
V OUT
AGC/V REF
TP801
IC801
INTERFACE
V IN
AGC/V REF
M6
NB 0/MUX 1
NB 3/MUX 4
OSC
BUS CON
REF OUT
REF TRIM
M5
RV802 REF TRIM
RV801 XP COMPENTION
CN801
ZOOM POTENTIAL
IC802
AUTO FOCUS CPU
Vcc
RESET
P10
P13
T0
INT
P20
DB 0
DB 3
DB 6
DB 7
Q801 RESET
D−A CONVERTER
RV803
IC803
FOCUS MOTOR DRIVE
V REG
Vcc1
+ IN
ΦB
ΦC
ΦA
MC
MB
UNREG
W801
TO POWER
CN805
FOCUS MOTOR 1
FOCUS MOTOR 2
FOCUS MOTOR
IC804, Q803-810
ZOOM MOTOR DRIVE
CN803
ZOOM MOTOR 1
ZOOM MOTOR 2
ZOOM MOTOR
CN802
AF ON
ZOOM TELE
ZOOM WIDE
Q802
Q811
W802
ZS-2 BOARD (1/2)
CN951
CN954


CG-1 BOARD
W601
LLA
CAM POWER SW
SENS HI
OUT DOOR
IN DOOR
EE CONT
AF ON
WR
WG
WB
FADER
WIPER
Q622
HD
VD
TP604
IC606④, Q621⑧
(1/2)
06 ⑫, Q602⑧
STB 1
STB 2
SO
SCK
W607
WB NG
TO CAMERA 1 AI-1 BOARD
W605
ZOOM TELE
ZOOM WIDE
W672
S674 CAMERA POWER
S673 SENS HIGH NORMAL
S672 WHITE BALANCE OUT DOOR IN DOOR AUTO
S671 FOCUS AUTO MANUAL
5V RV671 IRIS CLOSE OPEN
Q671
IC671 (1/4)
IC672
IC673 (1/3)
IC675 CHARACTOR GENERATOR
DATA
CLOCK
STB
VR
VG
VB
CLOCK OUT
CT671 CG CLOCK
SELECT ENABLE
5V
R-Y MATRIX
B-Y MATRIX
-Y MATRIX
IC678
IC677
DELAY
CLOCK
CLOCK (IC676 ⑫)
IC676 CHARACTOR GENERATOR
CLOCK IN
CLOCK
CHARACTOR MIX
Q672 BUFFER
CN671
BLK
SIC BLK
SI R-Y
SI B-Y
TO CAMERA 1 ME-4 BOARD
CN672
SI Y
SI Y BLK
EVF OUT
WHT FD
TO CAMERA 1 CP-18 BOARD
W671
TO EVF EM-1 BOARD
ER
FOCUS MOTOR
ZOOM MOTOR
ZS-2 BOARD (1/2)
CN951
CN954
ELE
IDE
ZOOM SWITCH
ZOOM TELE NEUTRAL WIDE
5V

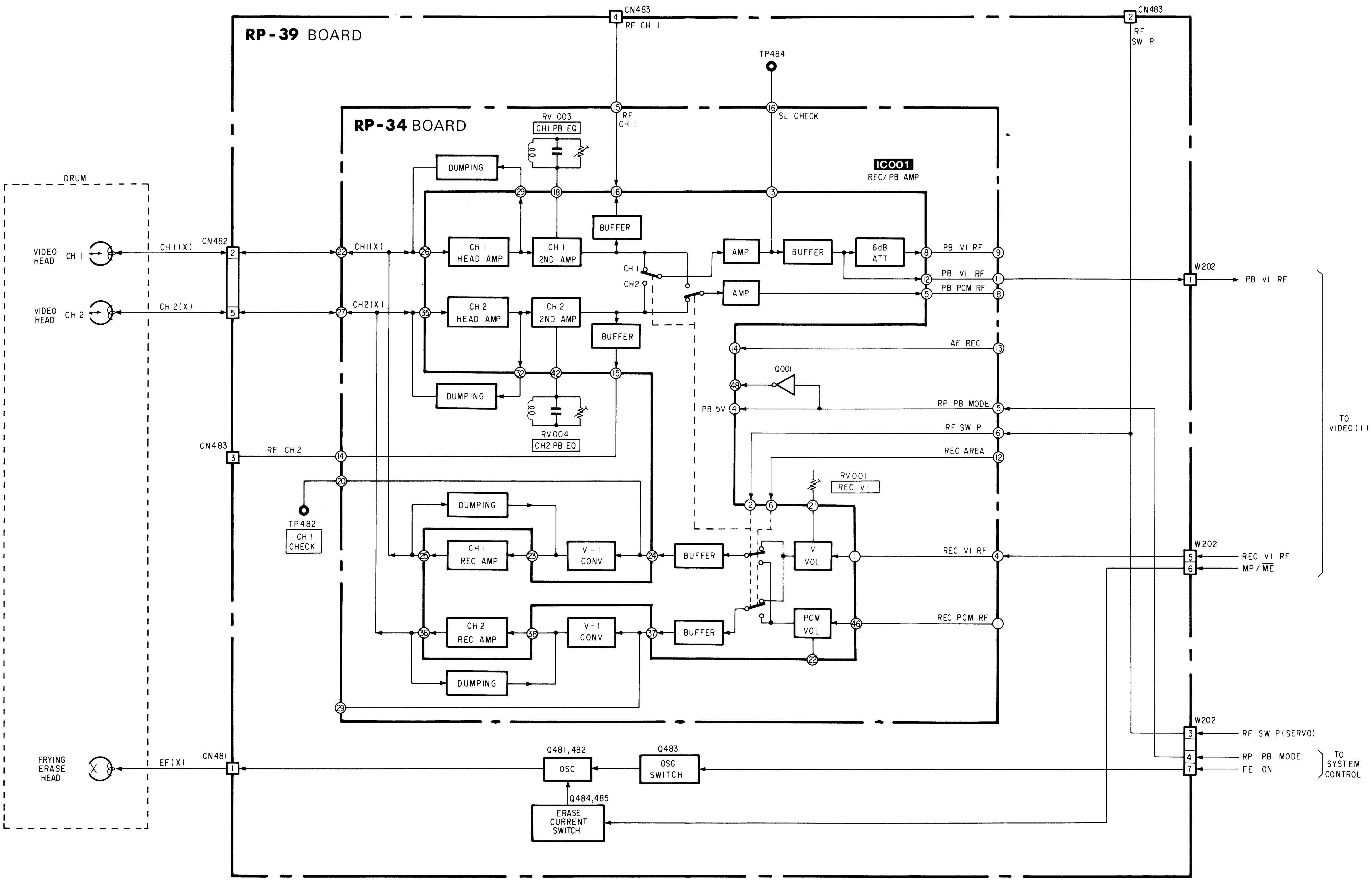
3-6. VIDEO BLOCK DIAGRAM (1)



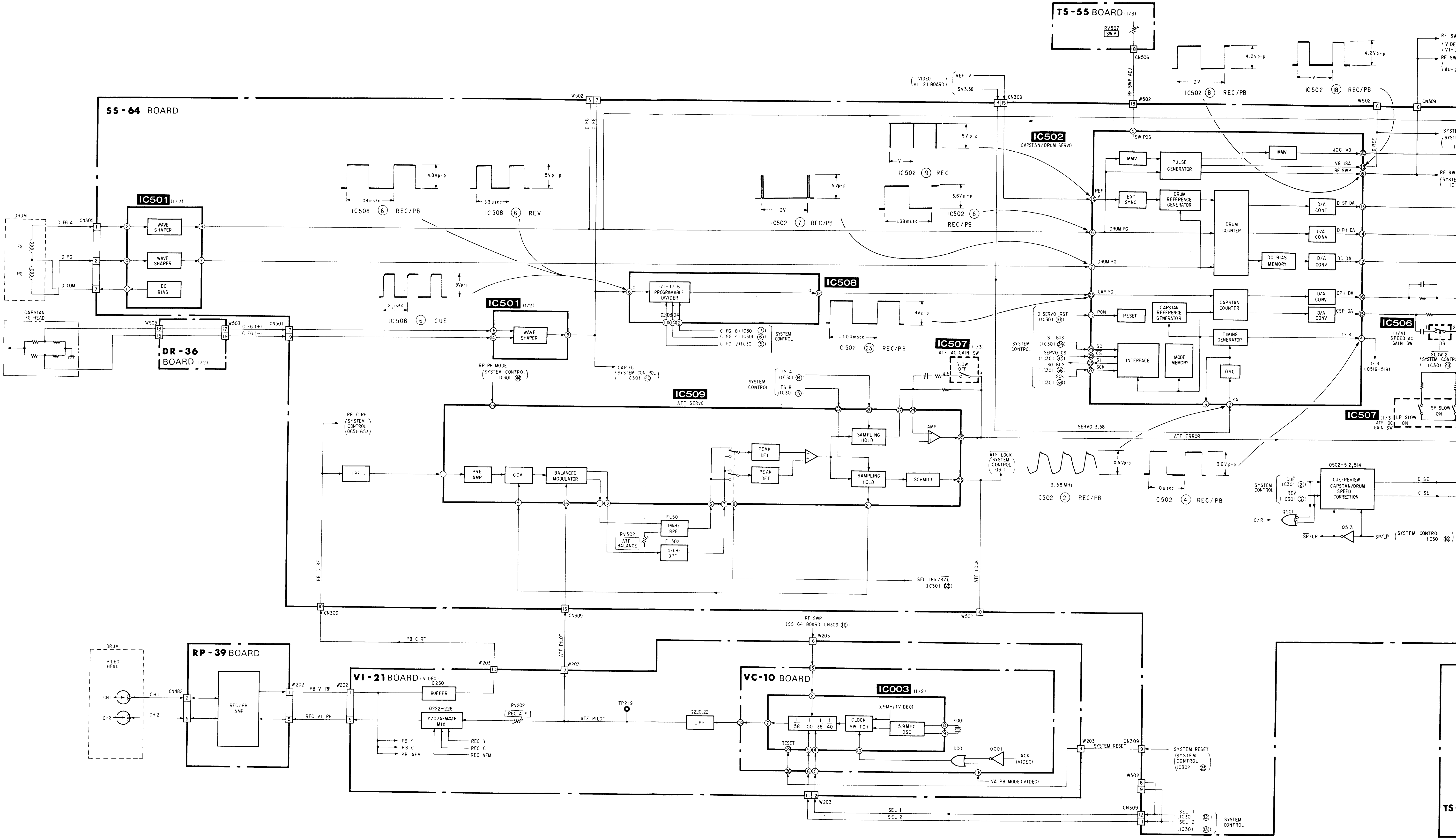
CC-6 BOARD (1/2)
SHARPNESS 2
SHARPNESS 1
RV901 SHARPNESS
SHARP
SOFT
W902
VI-21 BOARD (VIDEO)
CN207
W202
REC VI RF
TP222
TP 222 REC
0.48V p-p
Q224,225 Y/C MIX
Q223 C/AFM/ATF MIX
RV201 REC C
RV202 REC ATF
REC ATF RF (SERVO)
TP219
TP219 REC/PB
0.52Vp-p
10µsec
Q222 GAIN SWITCH
ME/MP (IC201 ③)
TO VIDEO (2)
RF SW P
RP PB MODE
MP/ME
RF SW P (W203 ⑯)
RP PB MODE (W203 ⑧)
MP/ME (Q232)
TP203
TP203 REC
0.5Vp-p
TP223
PB VI RF
AFM/ATF TRAP
Q226 BUFFER
Q230 BUFFER
CHROMA TRAP
Q227,228 SOFT LIMITER
TP224
Q235,236 ME/MP SWITCH
MP/ME (Q232)
JOG (IC201 ②)
DROP OUT P (VY-8 ⑤)
Q233,234,237 JOG NOISE SWITCH
W204
TO AUDIO
PB VI RF
REC AFM RF
CAMERA/LINE
VA PB MODE
AUDIO MUTE
SP/LP
CAMERA/LINE (IC201 ⑤)
VA PB MODE (IC201 ④)
AUDIO MUTE (IC201 ⑪)
SP/LP (IC201 ①)
0.22p-p
2H
TP224 PB
0.7Vp-p
TP221, TP223 PB
0.6Vp-p
VC-10 BOARD 54 REC
0.4Vp-p
VC-10 BOARD 54 PB
W203
TO SERVO
PB C RF
SV 3.58
REF V
RF SWP
SV 3.58 (VC-10 ⑩)
REF V (VC-10 ⑦)
RF SWP
TP221
EDIT (IC201 ⑧)
Q201
EDIT (VD-5 ⑯)
VIDEO IN
SYNC SEP Y
AGC OUT Y (REC VIDEO)
MIX Y (REC/PB Y)
PB Y
VY-8 BOARD
SYNC SEP Y
AGC OUT Y
MIX Y
EDIT
PB Y
BPF
Q018
Q016,017 NOISE REDUCE
Q019 BUFFER
PB 5V
TIME CONSTANT SWITCH
Q008,013,021
SP/LP (IC201 ①)
VA PB MODE (IC201 ④)
VA PB MODE (IC201 ⑦)
REG 5V
PB 5V
Q022,023 PB 5V SWITCH
Q014,015
PB REC
RV005 DEVIATION
RV004 AC CLIP
RV003 CARRIER
Q010,011 EMPHASIS
TP204
SUB DE-EMPH
SUB PRE-EMPH
MAIN PRE-EMPHASIS
HALF H SHIFT
FM MOD
RV006 PB LEVEL
MAIN DE-EMPHASIS
PB LEVEL
AC CLIP
VI SW P
RF SWP (W203 ⑯)
TP229
CAM/LINE (IC201 ⑤)
Q007 BAND REJECTION FILTER
REC Y RF
CLAMP
AGC DET
S AGC
Q209,210 EQ
LINE CAM
Q211-213
TP207
IC001 Y PROCESS
LINE
CAMERA
AGC AMP
CLAMP VD ADD
VIDEO OUT LEVEL
RV002 AGC
VIDEO OUT 1
DOC DET
VIDEO OUT 2
SYNC SEP
CLAMP PULSE
RF AGC
LIMITER
FM DEMOD
RV001 VIDEO OUT
CAM
PB Y RF
Q004 EQ
Q005 LPF
DRUP OUT P (VD-5 ㉗, Q223)
C SYNC (VC-10 ⑮)
2.6Vp-p
H
ACK C
AGC P (VC-10 ⑫)
JOG VD (VC-10 ⑧)
ACK C (PB C)
VY-8 BOARD ⑬ REC/PB
0.6Vp-p
0.2µsec
TP229 REC
COMB IN C (PB C)
COMB OUT C (REC/PB C)
VI SW P (⑬)
C SYNC (VY-8 ⑮)
VA PB MODE (⑯)
SYSTEM R (IC201 ⑬)
COMB IN C
TP220
TP216
TP218
VC-10 BOARD
0.32Vp-p
TP220 REC
REC C RF
CAL B
COMB IN C
CAR
SWP x 1/2 1H (IC003 ㊹)
VCO ADJ
ACK C
Q003 BUFFER
LPF
FL003 BPF
FL001 4.32MHz CF
RV001 VCO
ACK DC (IC003 ㊸)
IC001 CHROMA EMPHASIS
IC002 CHROMA PROCESS
RV002 CARRIER BALANCE
CARRIER INVERT
4.32MHz
CARRIER CONV
743KHz
378FH VCO
AFC ID
AFC
Q002 BUFFER
LPF
BF (IC003 ㊹)
PB CHROMA
REC/PB CHROMA
REC
PB
LIMITER
ATT
VA PB MODE (⑯)
3.58MHz
CHROMA CONV
APC DET
ACK
SYNC DET
BURST EMPH/DE EMPH
3.58MHz X'TAL OSC
90° SHIFT
CV001 FSC
X002
ACC AMP
DC AMP & CH HOLD
PEAK HOLD
SW
CHROMA INVERT
JOG (⑪)
VI SWP (⑬)
VA PB MODE (⑯)
4.2Vp-p
2V
VC-10 BOARD ⑬ REC/PB
0.52Vp-p
3.58MHz
TP210 REC/PB
REC CHROMA
FL002 REC C BPF
PB C RF
LPF
PB CHROMA
VI SWP
FL201 CE TRAP
C EMP
TP215
ACC
TP228
VA PB MODE (IC201 ④)
RF SWP (W203 ⑯)
JOG (IC201 ②)
SV3.58 (W203 ⑭)
TP210
CAMERA IN
IC
AFC
VI SW P
FH AF

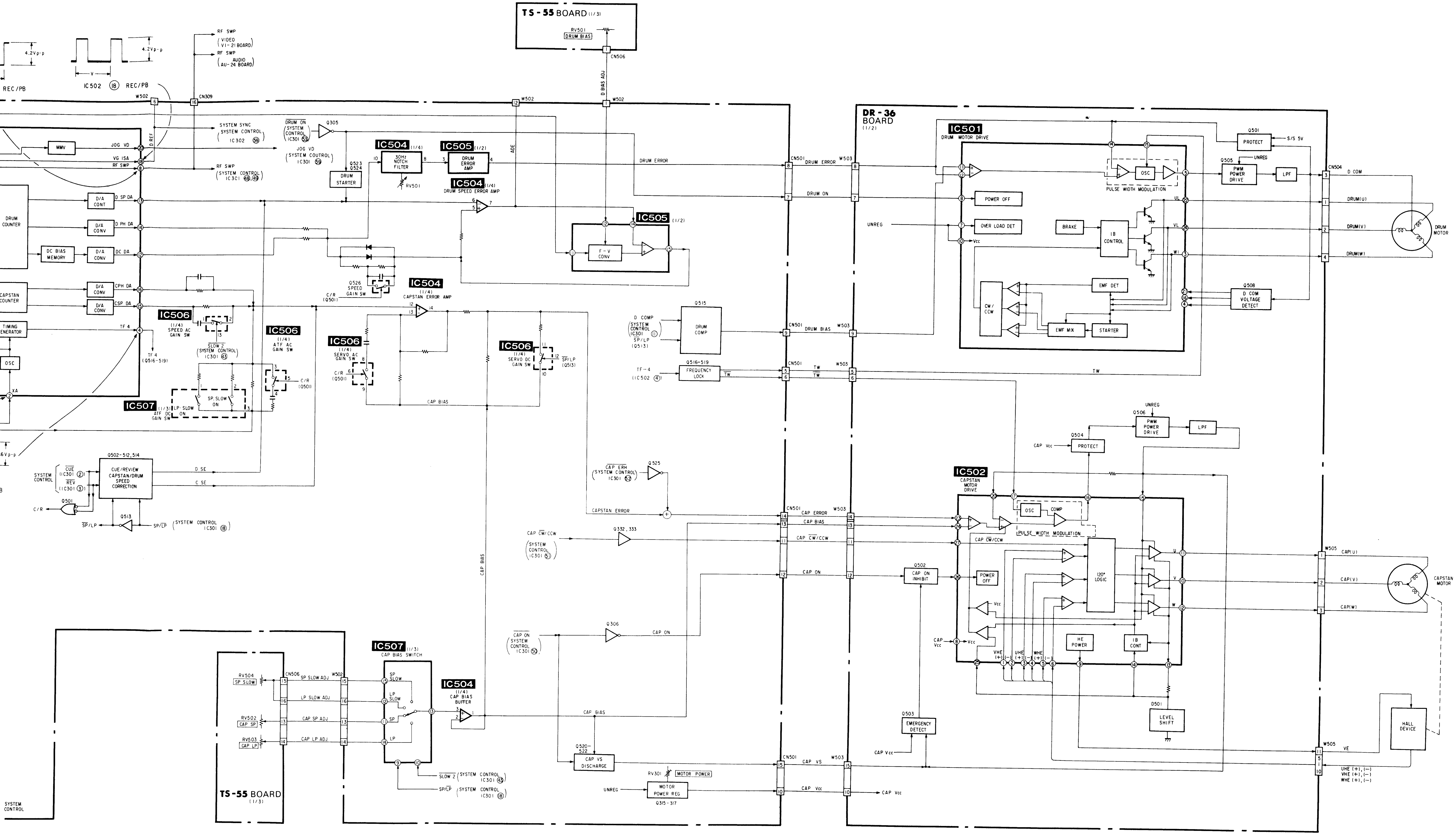

VIDEO IN
SYNC SEP Y
AGC OUT Y (REC VIDEO)
MIX Y (REC/PB Y)
PB Y
SC-6 BOARD (VIDEO)
V IN
CN208
CN384
VIDEO IN
CN206
VIDEO OUT2
VIDEO OUT
CN385 MULTI CONNECTOR
TP208
TP212 PB
TP212 REC
0.52Vp-p
TP212
Q205
BUFFER
1Vp-p
TP208 REC
CN209
RETURN VIDEO
CAM REC
TO EVF
VA PB MODE (IC201 ⑦)
Q220
CAM/LINE (IC201 ⑤)
TP229 REC
0.6Vp-p
0.2μsec
CAM/LINE (IC201 ⑤)
LINE
CAM
Q211-213
CONB IN C (PB C)
CONB OUT C (REC/PB C)
BURST P (VC-10 ㉞)
SP/LP (IC201 ①)
TP211
VD-5 BOARD
IC001
COMB FILTER
AGC OUT Y
Y/C SEP
LPF
FL002
Y LPF
Q003
BUFFER
MIX Y
FL001
Y DL
SYNC SEP Y
PB Y
VA PB MODE (IC201 ④)
DL201(1/2)
1H DELAY
LV201
CP
CORR
NON-CORR
REC
PB
B/W
COLOR
PB ON
RV002
CD
CONB OUT C
NON-CORR
CORR
CORRELATION DET
RV203
YD
LPF
AGC DET
AM DET
AGC
DROP OUT
NORMAL
H SYNC INSERT
LIMITER
AM MOD
CLAMP
REC ON
PB ON
DROP OUT P (VY-8 ⑤)
DOC OFF
JOG (IC201 ②)
10.7MHz
HD INSERT
X201
Q001, 002
CORR DET SENS SW
EDIT
DUB AREA
Y-YD
EDIT (Q201)
TP213
Q202
SP/LP (IC201 ①)
Q203,214,216-219
Y COMB CHARACTOR SWITCH
CAMERA/LINE (IC201 ⑤)
VA PB MODE (IC201 ⑦)
VA PB MODE (IC201 ④)
IC003 (1/2)
AFC, PULSE GENERATOR
VIDEO MUTE (IC201 ⑨)
ACK DC (Q002)
V SEP
REF V (W203 ⑮)
SW P×1/2fH PULSE GENERATOR
SWP×1/2fH (IC002 ㊴)
VI SW P (⑬)
HALF H KILLER
SYNTHESIS GATE
JOG VD (VY-8 ⑮)
JOG VD (W203 ⑰)
C SYNC (VY-8 ⑮)
VA PB MODE (⑯)
SYSTEM R (IC201 ⑬)
1/378
DELAY PULSE GENERATOR
AGC P (VY-8 ⑭)
BURST P (VD-5 ㉝)
AFC AFC ID
378fH
1/8
BF (IC002)
FH
AFC ID
AFC
47+1/4fH
ACK C
ACK DC (IC003 ㊸)
LPF
BUFFER
BF (IC003 ㊹)
X002
2.6Vp-p
VY-8 BOARD ⑬ REC/PB
VD-5 BOARD ⑤ PB
0.5Vp-p
10.7MHz
0.28Vp-p
VD-5 BOARD ⑨ REC/PB
0.9Vp-p
TP213 REC/PB
6.2Vp-p
VC-10 BOARD ⑫ REC
4.4Vp-p
VC-10 BOARD ⑫ PB
4.2Vp-p
2V
VC-10 BOARD ⑬ REC/PB
0.52Vp-p
3.58MHz
TP210 REC/PB
IC201
EXPANSION PORT
Q232
MP/ME
SP/LP
JOG
ME/MP
VA PB MODE
CAMERA/LINE
TALLY
VA PB MODE
EDIT
V MUTE
AUDIO MUTE
SP JOG
SYSTEM RESET
STB
SO
SCK
W203
SYSTEM RESET
VA SP STB
SO
SCK
JOG VD
TO SYSTEM CONTROL
JOG VD (VY-8 ⑮)
RP PB MODE (W202 ④)
RP PB MODE
TP202
Q241,242
CAMERA VIDEO MUTE
VA PB MODE (IC201 ⑦)
CN201
W901
CAMERA OUT
CC-6 BOARD (1/2)
Q906
BUFFER
Q901-905
EXT
INT
J901 ACCESS
IN
OUT
W903
CAM IN
CC CONT
VIDEO IN
TO CAMERA(1)
0.56Vp-p
TP202 CAMERA
CAMERA IN

3-7. VIDEO BLOCK DIAGRAM (2)


RP-39 BOARD
RP-34 BOARD
DRUM
VIDEO HEAD CH 1
VIDEO HEAD CH 2
FRYING ERASE HEAD
CH 1(X)
CH 2(X)
EF(X)
CN482
CN483
CN481
RF CH 1
RF SW P
TP484
SL CHECK
RF CH 1
RV 003
CH1 PB EQ
DUMPING
CH 1 HEAD AMP
CH 1 2ND AMP
BUFFER
CH 2 HEAD AMP
CH 2 2ND AMP
RV004
CH2 PB EQ
IC001
REC/PB AMP
AMP
BUFFER
6dB ATT
PB V1 RF
PB V1 RF
PB PCM RF
AF REC
Q001
PB 5V
RP PB MODE
RF SW P
REC AREA
RV001
REC V1
RF CH2
TP482
CH 1 CHECK
CH 1 REC AMP
CH 2 REC AMP
V-I CONV
V VOL
PCM VOL
REC V1 RF
REC PCM RF
W202
PB V1 RF
REC V1 RF
MP/ME
TO VIDEO(1)
RF SW P(SERVO)
RP PB MODE
FE ON
TO SYSTEM CONTROL
Q481,482
OSC
Q483
OSC SWITCH
Q484,485
ERASE CURRENT SWITCH

3-8. SERVO BLOCK DIAGRAM


TS-55 BOARD (1/3)
RV507 SWP
CN506
SS-64 BOARD
IC501 (1/2)
WAVE SHAPER
WAVE SHAPER
DC BIAS
DRUM
FG
PG
D FG A
D PG
D COM
CN305
CAPSTAN FG HEAD
DR-36 BOARD (1/2)
W505
W503
CN501
C FG (+)
C FG (−)
IC501 (1/2)
WAVE SHAPER
IC508 ⑥ REC/PB
IC508 ⑥ REV
IC508 ⑥ CUE
1.04msec
15.3usec
112 μsec
4.8Vp-p
5Vp-p
IC508
1/1-1/16 PROGRAMABLE DIVIDER
C FG 8 (IC301 ⑦)
C FG 4 (IC301 ⑥)
C FG 2 (IC301 ⑤)
SYSTEM CONTROL
CAP FG (SYSTEM CONTROL IC301 ⑧)
RP PB MODE (SYSTEM CONTROL IC301 ㊹)
IC509
ATF SERVO
PB C RF (SYSTEM CONTROL Q651-653)
LPF
PRE AMP
GCA
BALANCED MODULATOR
PEAK DET
PEAK DET
SAMPLING HOLD
SAMPLING HOLD
AMP
SCHMITT
FL501 16kHz BPF
FL502 47kHz BPF
RV502 ATF BALANCE
SEL 16k/47k (IC301 53)
TS A (IC301 ⑭)
TS B (IC301 ⑮)
IC507 (1/3) ATF AC GAIN SW
SLOW OFF
ATF LOCK (SYSTEM CONTROL Q311)
ATF LOCK
ATF ERROR
SERVO 3.58
IC502 ⑲ REC
IC502 ⑦ REC/PB
IC502 ⑥ REC/PB
IC502 ㉓ REC/PB
IC502 ② REC/PB
IC502 ④ REC/PB
IC502 ⑧ REC/PB
IC502 ⑱ REC/PB
3.58MHz
1.38msec
1.04msec
10μsec
VIDEO (VI-21 BOARD)
REF V
SV3.58
CN309
W502
RF SWP ADJ
IC502
CAPSTAN/DRUM SERVO
SW POS
MMV
PULSE GENERATOR
MMV
JOG VD
VG ISA
RF SWP
EXT SYNC
DRUM REFERENCE GENERATOR
DRUM COUNTER
DRUM FG
DRUM PG
CAP FG
D/A CONV
D SP DA
D PH DA
DC BIAS MEMORY
DC DA
CAPSTAN COUNTER
CAPSTAN REFERENCE GENERATOR
CPH DA
CSP DA
RESET
PON
D SERVO RST (IC301 ⑩)
SI BUS (IC301 54)
SERVO CS (IC301 57)
SO BUS (IC301 56)
SCK (IC301 55)
INTERFACE
MODE MEMORY
TIMING GENERATOR
OSC
TF 4
TF 4 (Q516-519)
IC506 (1/4) SPEED AC GAIN SW
SLOW 2 (SYSTEM CONTROL IC301 43)
IC507 (1/3) ATF DC GAIN SW
LP SLOW ON
SP SLOW ON
Q502-512,514
CUE/REVIEW CAPSTAN/DRUM SPEED CORRECTION
CUE (IC301 ②)
REV (IC301 ③)
Q501
Q513
C/R
SP/LP
SYSTEM CONTROL IC301 ⑧
D SE
C SE
PB C RF
CN309
W502
ATF PILOT
RF SWP (SS-64 BOARD CN309 ⑯)
W203
RP-39 BOARD
REC/PB AMP
VIDEO HEAD
CH1
CH2
CN482
W202
PB VI RF
REC VI RF
VI-21 BOARD (VIDEO)
Q230 BUFFER
Q222-226 Y/C/AFM/ATF MIX
RV202 REC ATF
PB Y
PB C
PB AFM
REC Y
REC C
REC AFM
TP219
Q220,221 LPF
VC-10 BOARD
IC003 (1/2)
5.9MHz (VIDEO)
CLOCK SWITCH
5.9MHz OSC
X001
D001
Q001
ACK (VIDEO)
RESET
VA PB MODE (VIDEO)
SYSTEM RESET
SYSTEM RESET (SYSTEM CONTROL IC302 23)
SEL 1 (IC301 ⑫)
SEL 2 (IC301 ⑬)
SYSTEM CONTROL


TS-55 BOARD (1/3)
RV501 DRUM BIAS
CN506
D BIAS ADJ
W502
4.2Vp-p
IC502 ⑱ REC/PB
REC/PB
RF SWP (VIDEO VI-21 BOARD)
RF SWP (AUDIO AU-24 BOARD)
CN309
SYSTEM SYNC (SYSTEM CONTROL IC302 ㊺)
MMV
JOG VD
VG ISA
RF SWP
D REF
JOG VD (SYSTEM CONTROL IC301 ㊾)
RF SWP (SYSTEM CONTROL IC301 ㊽,㊾)
DRUM ON (SYSTEM CONTROL IC301 ㊿)
Q305
Q523 Q524 DRUM STARTER
IC504 (1/4) 30Hz NOTCH FILTER
RV501
IC505 (1/2) DRUM ERROR AMP
IC504 (1/4) DRUM SPEED ERROR AMP
ADE
DRUM ERROR
DRUM ON
DRUM COUNTER
D/A CONT
D/A CONV
DC BIAS MEMORY
D SP DA
D PH DA
DC DA
CAPSTAN COUNTER
CPH DA
CSP DA
TIMING GENERATOR
OSC
XA
TF 4
IC505 (1/2) F-V CONV
Q526 SPEED GAIN SW
C/R (Q501)
IC504 (1/4) CAPSTAN ERROR AMP
IC506 (1/4) SPEED AC GAIN SW
SLOW 2 (SYSTEM CONTROL IC301 ㊺)
IC506 (1/4) ATF AC GAIN SW
C/R (Q501)
TF 4 (Q516-519)
IC506 (1/4) SERVO AC GAIN SW
IC506 (1/4) SERVO DC GAIN SW
SP/LP (Q513)
CAP BIAS
IC507 (1/3) ATF DC GAIN SW
LP-SLOW ON
SP, SLOW ON
6Vp-p
SYSTEM CONTROL
CUE (IC301 ②)
REV (IC301 ③)
Q502-512, 514 CUE/REVIEW CAPSTAN/DRUM SPEED CORRECTION
D SE
C SE
Q501
C/R
Q513
SP/LP (SYSTEM CONTROL IC301 ⑱)
D COMP (SYSTEM CONTROL IC301 ⑪) SP/LP (Q513)
Q515 DRUM COMP
TF-4 (IC502 ④)
Q516-519 FREQUENCY LOCK
TW
CN501
W503
DRUM BIAS
CAP ERH (SYSTEM CONTROL IC301 ㊷)
Q525
CAPSTAN ERROR
CAP CW/CCW (SYSTEM CONTROL IC301 ㊿)
Q332, 333
CAP ERROR
CAP BIAS
CAP CW/CCW
CAP ON
CAP ON (SYSTEM CONTROL IC301 ㊿)
Q306
TS-55 BOARD (1/3)
RV504 SP SLOW
RV502 CAP SP
RV503 CAP LP
SP SLOW ADJ
LP SLOW ADJ
CAP SP ADJ
CAP LP ADJ
IC507 (1/3) CAP BIAS SWITCH
SP SLOW
LP SLOW
SP
LP
IC504 (1/4) CAP BIAS BUFFER
SLOW 2 (SYSTEM CONTROL IC301 ㊺)
SP/LP (SYSTEM CONTROL IC301 ⑱)
Q520-522 CAP VS DISCHARGE
CAP VS
RV301 MOTOR POWER
UNREG
MOTOR POWER REG
Q315-317
CAP Vcc
DR-36 BOARD (1/2)
IC501 DRUM MOTOR DRIVE
POWER OFF
OVER LOAD DET
UNREG
Vcc
PULSE WIDTH MODULATION
OSC
BRAKE
IB CONTROL
CW/CCW
EMF DET
EMF MIX
STARTER
Q501 PROTECT
S/S 5V
Q505 PWM POWER DRIVE
LPF
Q508 D COM VOLTAGE DETECT
CN504
D COM
DRUM(U)
DRUM(V)
DRUM(W)
UL
VL
WL
DRUM MOTOR
UNREG
Q506 PWM POWER DRIVE
LPF
Q504 PROTECT
CAP Vcc
IC502 CAPSTAN MOTOR DRIVE
OSC
COMP
PULSE WIDTH MODULATION
CAP CW/CCW
120° LOGIC
POWER OFF
Q502 CAP ON INHIBIT
Vcc
CAP Vcc
HE POWER
IB CONT
VHE (+)(-)
UHE (+)(-)
WHE (+)(-)
U
V
W
D501
LEVEL SHIFT
Q503 EMERGENCY DETECT
CAP Vcc
W505
CAP(U)
CAP(V)
CAP(W)
CAPSTAN MOTOR
HALL DEVICE
VE
UHE (+), (-)
VHE (+), (-)
WHE (+), (-)

3-9. MODE CONTROL CPU (IC302 on SS-64 Board) — PERIPHERAL CIRCUITS INTERFACE

Signal name	I/O	Pin No.	Input/Output level
$\overline{\text{TEST}}$	I	1	Pull-up to "H" level. It becomes TEST mode when "L".
$\overline{\text{SAFTY}}$	I	2	Fixed at "L" level.
$\overline{\text{EXT POWER ON}}$	I	3	"L" when the power supply of equipments (AC adaptor or T/T unit) which is connected to multi-connector is ON.
VTR POWER ON	I	4	"L" when the VTR POWER button of the main unit or the remote commander is pressed.
CAMERA POWER ON	I	5	"L" when the CAMERA POWER switch S674 (CG-1 board) is pressed.
START/STOP	I	6	Pull-up to "H" level.
$\overline{\text{EJECT}}$	I	7	Pull-up to "H" level.
VA SP STB	O	8	A strobe signal (V cycle "H" pulse) for the EXPANSION PORT (IC201 on VI-21 board)
MECHA CS	O	9	A communication request signal (V cycle "H" pulse) to the mechanism control CPU (IC301 on SS-64 board)
LS TBC CS	O	10	A communication request signal (V cycle "L" pulse) to the control L CPU (IC 303 on SS-64 board)
DDS CS	O	11	A communication request signal (V cycle "H" pulse) to the CAMERA system control CPU (IC601 on FC-10 board)
HMS/$\overline{\text{REEL}}$	I	14	"H" when the SP/HMS-LP/REEL switch (S309 on SK-12 board) is positioned at the SP/HMS side.
SP/$\overline{\text{LP}}$	I	15	"H" when the SP/HMS-LP/REEL switch (S309 on SK-12 board) is positioned at the SP/HMS side.
$\overline{\text{CLOG}}$	I	16	During SP mode playback, "H" when the PB RF signal is played back normally.
$\overline{\text{EDIT}}$	I	17	"L" when the EDIT switch (S310 on SK-12 board) is at ON.
$\overline{\text{PB SP}}$	I	18	Pull-up to "H" level.
$\overline{\text{PB LP}}$	I	19	Pull-up to "H" level.
$\overline{\text{VTR ON}}$	O	20	When it is at "L", the DC-DC converter (DR201) on VI-21 board is turned ON.
$\overline{\text{CAM ON}}$	O	21	When it is at "L", the DC-DC converter on the CAMERA is turned ON.
BE/$\overline{\text{PD}}$	O	22	"L" when in the battery pre-end detection and TEST mode.
SYSTEM RESET	O	23	When the power supply is turned ON, reset the respective CPUs. ("L" when resetting)
$\overline{\text{VTR LED}}$	O	27	"L" when VTR mode or VTR + CAMERA mode.
$\overline{\text{RESET}}$	I	32	A resetting input when turning the UNREG power supply ON/OFF. ("L" pulse when resetting)
SCK	I/O	33	Serial data transfer clock input/output for communication to the respective CPUs ("L" pulse train of the V cycle)
SO	O	34	Serial data output for communication to the respective CPUs ("H" pulse train of the V cycle)
SI	I	36	Serial data input for communication to the respective CPUs ("L" pulse train of the V cycle)
WAKE UP	I	39	A selection pulse (⊓) input from the power save mode to the normal mode
COUNTER	I	40	A pulse (⊔) input for the tape counter when in CUE/REVIEW and FF/REW modes
DDS RESET	O	41	A reset signal output ("H" when resetting) for the CAMERA system control CPU (IC601 on FC-10 board)
RF SW PULSE	I	48	A pulse input of 30Hz duty 50%
OSC ON	O	50	"H" when FF/REW mode and CUE/REV mode.
FF + REW	O	51	"H" when FF/REW mode.
SYSTEM SYNC	I	59	An interruption request signal from the servo IC (IC502 on SS-64 board) (V cycle pulse)
CAP CW/$\overline{\text{CCW}}$	I	60	An input for the tape counter. "H" when the capstan is rotating in normal direction.
$\overline{\text{CAP ON}}$	I	61	An input for the tape counter. "L" when the capstan is rotating.
$\overline{\text{DEW S}}$	I	62	"L" when dew condensation is generated in the mechanism
$\overline{\text{BATT DOWN}}$	O	64	"L" when the battery is down

3-10. SYSTEM CONTROL — CAMERA, VIDEO AND AUDIO BLOCKS INTERFACE

Signal name	I/O	REF No. PIN No.	STOP	FF	REW	CUE	RE-VIEW	PB	PB/PAUSE	FRA-ME	REC	REC/PAUSE	RE-VERSE
SP/$\overline{\text{LP}}$	O	VI-21 board IC201 ①	*9	*9	*9	*1	*1	*2	*1	*1	*9	*9	*1
JOG	O	VI-21 board IC201 ②	L	L	L	H	H	L	H	H	L	L	H
ME/$\overline{\text{MP}}$	O	VI-21 board IC201 ③	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3
VA PB MODE	O	VI-21 board IC201 ④	L	L	L	H	H	H	H	H	L	L	H
CAM/$\overline{\text{LINE}}$	O	VI-21 board IC201 ⑤	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4
TALLY	O	VI-21 board IC201 ⑥	L	L	L	L	L	L	L	L	L*4	L	L
$\overline{\text{VA PB MODE}}$	O	VI-21 board IC201 ⑦	H	H	H	L	L	L	L	L	H	H	L
$\overline{\text{EDIT}}$	O	VI-21 board IC201 ⑧	H	H	H	H	H	H*5	H*5	H*5	H	H	H
V MUTE	O	VI-21 board IC2-1 ⑨	L	L	L	L	L	L	L	L	L	L	L
A MUTE	O	VI-21 board IC 201 ⑪	L	L	L	H	H	L	H	H	L	L	H
SP JOG	O	VI-21 board IC201 ⑫											
SYSTEM RESET	O	VI-21 board IC201 ⑬	L	L	L	L	L	L	L	L	L	L	L
FE ON	O	SS-64 board IC301 ㊷	.L	L	L	L	L	L	L	L	H	L	L
RP PB MODE	O	SS-64 board IC301 ㊹	L	L	L	H	H	H	H	H	L	L	H
JOG VD	O	SS-64 board IC301 ㊺	L	L	L	*6	*6	L	*6	*6	L	L	*6
$\overline{\text{VTR ON}}$	O	SS-64 board IC302 ⑳	L	L	L	L	L	L	L	L	L	L	L
$\overline{\text{CAM ON}}$	O	SS-64 board IC302 ㉑	H*7	H*7	H*7	H*7	H*7	H*7	H*7	H*7	H*8	H*8	H*7

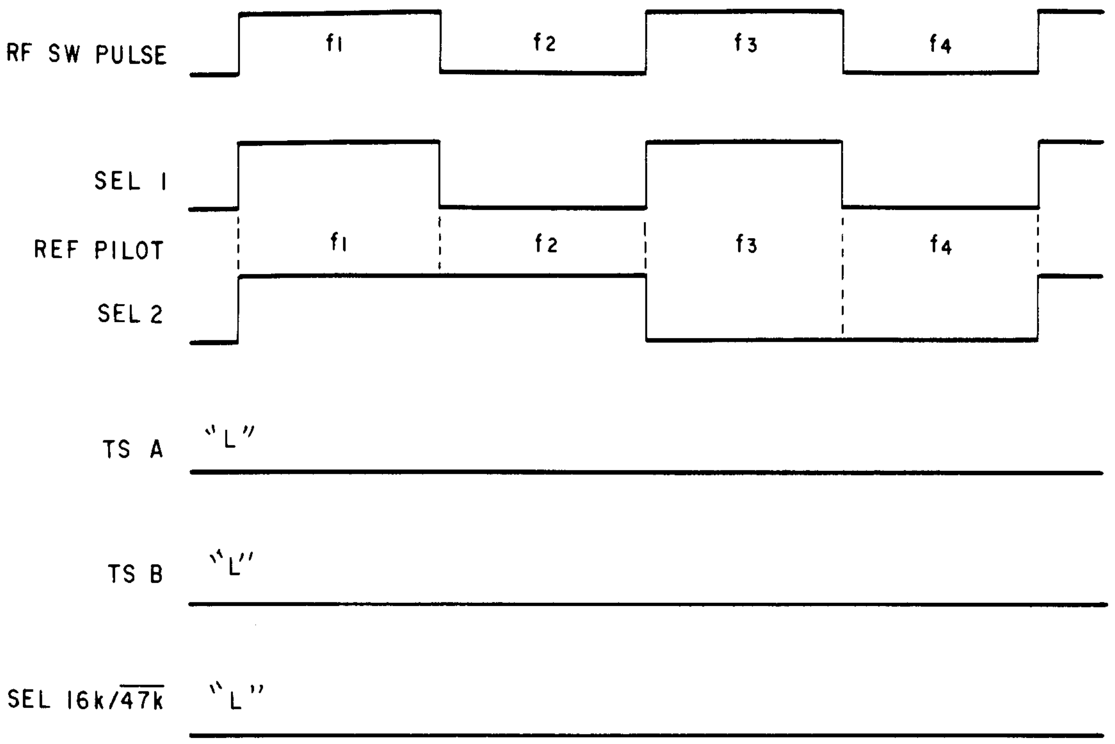
*1 Maintains the prior level.
*2 Dependent upon recording mode (SP/LP) of playback tape.
*3 Dependent upon the type of tape.
*4 "H" when power supply is ON ($\overline{\text{CAM ON}}$ = "L") at the camera section.
*5 "L" when EDIT switch (S310 on SK-12 board) is ON.
*6 Pulse of V cycle (⎍).
*7 "L" when VTR+CAMERA mode (After turning the VTR POWER ON with the VTR POWER switch, operate the camera section by pressing the CAMERA POWER switch).
*8 "L" when VTR+CAMERA or CAMERA mode.
*9 Dependent upon SP/LP selector (S309 on SK-12 board).

3-11. MECHANISM CONTROL CPU (IC301 on SS-64 board) — SERVO BLOCK INTERFACE

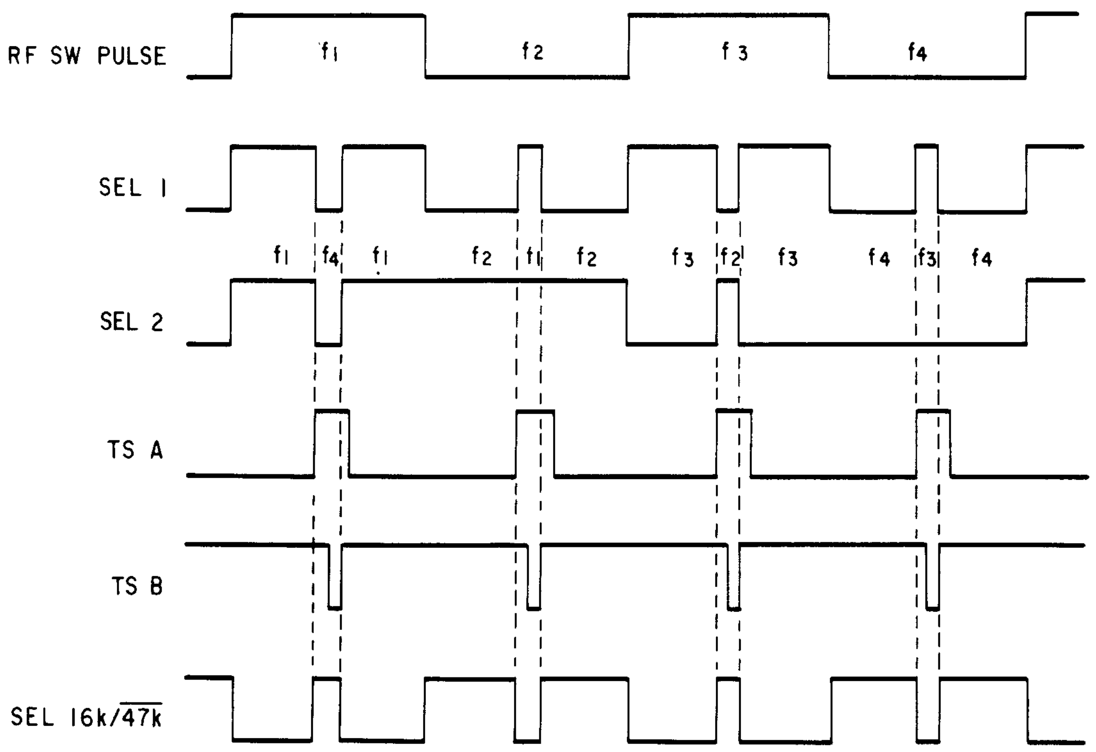
Signal name	I/O	Pin No.	STOP	FF	REW	CUE	REVIEW	PB	PB/PAUSE	FRA-ME	REC	REC/PAUSE	REVERSE *1
$\overline{\text{CUE}}$	O	②	H	H	H	L	H	H	H	H	H	H	H
$\overline{\text{REVIEW}}$	O	③	H	H	H	H	L	H	H	H	H	H	H
CFG 2	O	⑤	L	H	H	L	H	L	L	L	L	L	L
CFG 4	O	⑥	L	H	H	L	H	L	L	L	L	L	L
CFG 8	O	⑦	L	H	H	H	L	L	L	L	L	L	L
D SERVO RESET	O	⑩	L	L	L	L	L	L	L	L	L	L	L
D COMP	O	⑪	L	L	L	L	L	L	L	L*2	L	L	L
SEL 1	O	⑫	H	H	H	*3	*4	*5	H	H*7	*9	H	*10
SEL 2	O	⑬	H	H	H	*3	*4	*5	H/L	H/L	*9	H/L	*10
TS A	O	⑭	L	L	L	*3	*4	*5	L	L	L	L	*10
TS B	O	⑮	L	L	L	*3	*4	*5	*6	*8	L	L	*10
M SP/$\overline{\text{LP}}$	O	⑱	*11	*11	*11	*12	*12	*13	*12	*12	*11	*11	*12
SCK	I/O	㉝	Serial communication with servo IC (IC502 on SS-64 board)										
SI	O	㉞											
SO	I	㊱											
$\overline{\text{CAP FG}}$	I	㊵	H/L	*14	*14	*14	*14	*14	H/L	*14	*14	H/L	*14
$\overline{\text{SLOW 2}}$	O	㊸	H	H	H	H	H	H	L	L	H	H	H
RP PB MODE	O	㊹	L	L	L	H	H	H	H	H	L	L	H
RF SW PULSE	I	㊽ ㊾	L	*15	*15	*15	*15	*15	*15	*15	*15	*15	*15
$\overline{\text{CAP ON}}$	O	㊿	H	L	L	L	L	L	H	H*7	L	H	L
CAP CW/$\overline{\text{CCW}}$	O	(51)	H	H	L	H	L	H	H	H*7	H	H	L
$\overline{\text{CAP ERH}}$	O	(52)	H	H	H	H	H	H	H	H*7	H	H	H
$\overline{\text{DRUM ON}}$	O	(53)	H	L	L	L	L	L	L	L	L	L	L
SST	I	(55)	H	30Hz trapezoidal wave which has been synchronized with RF SW PULSE									
JOG VD	I	(59)	L	*16	*16	*16	*16	*16	*16	*16	*16	*16	*16
SEL 16K/$\overline{\text{47K}}$	O	(63)	L	L	L	*3	*4	*5	H	H*17	L	L	*10

*1 Performed only during REC REVIEW.
*2 "H" pulse during frame forwarding (⎍).
*3 See timing chart 4.
*4 See timing chart 5.
*5 See timing chart 2.
*6 See timing chart 3.
*7 "L" pulse during frame forwarding (⎎).
*8 V cycle "L" pulse. However no "L" pulse during frame forwarding.
*9 See timing chart 1.
*10 See timing chart 6.
*11 Dependent upon SP/LP selector (S309 on SK-12 board).
*12 Maintains prior level.
*13 Dependent upon recording mode (SP/LP) of playback tape.
*14 The frequency pulse proportionate to the rotating number of the capstan motor.
*15 30 Hz 50% duty pulse.
*16 V cycle "H" pulse.
*17 "L" pulse during frame forwarding (⎎⎎).

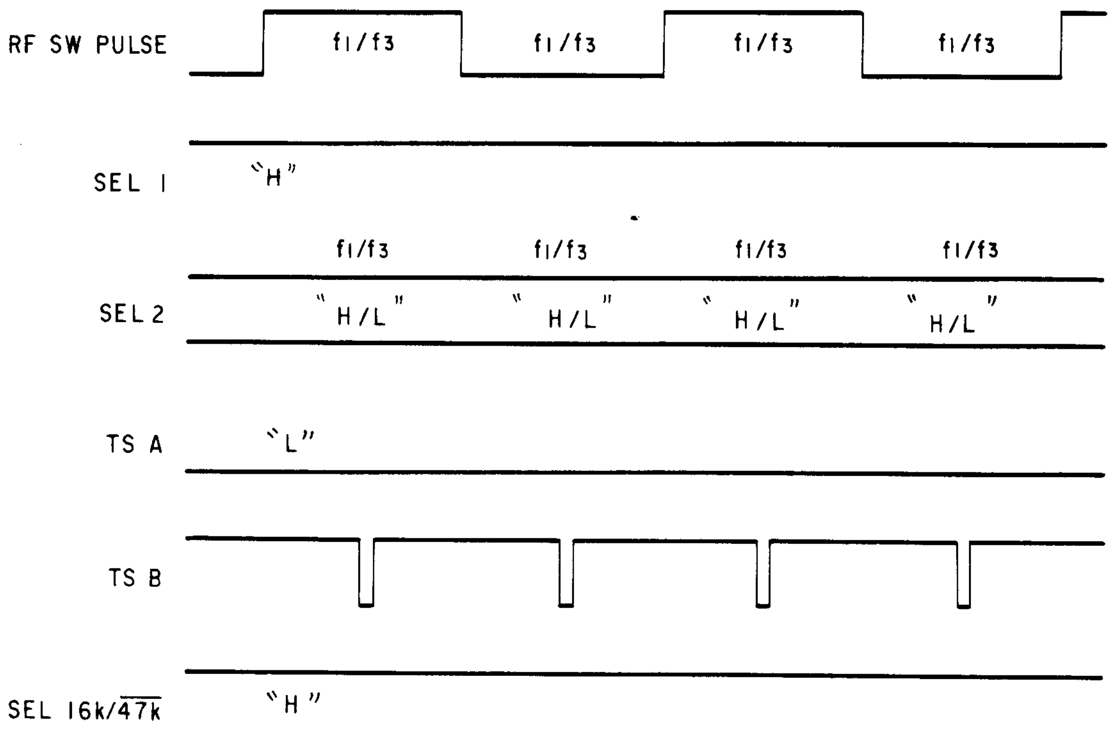
3-12. TIMING CHART 1 (REC)


RF SW PULSE
f1
f2
f3
f4
SEL 1
REF PILOT
f1
f2
f3
f4
SEL 2
TS A
"L"
TS B
"L"
SEL 16k/$\overline{47k}$
"L"

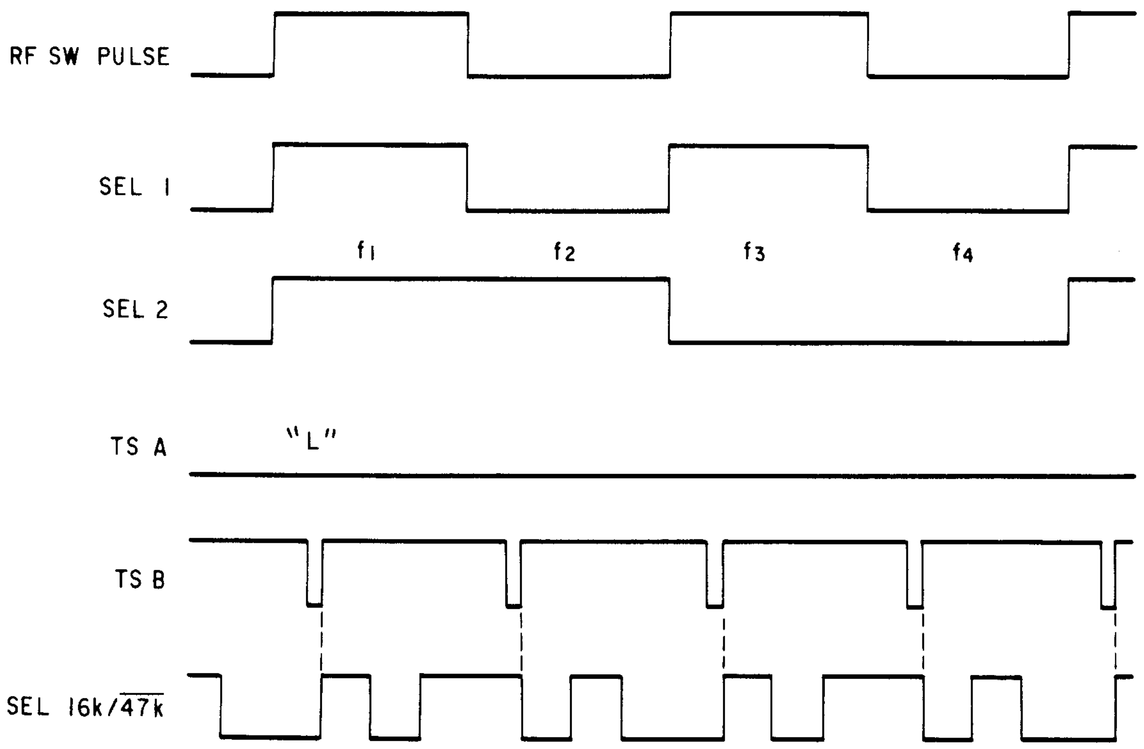
3-13. TIMING CHART 2 (PB)


RF SW PULSE
f1
f2
f3
f4
SEL 1
f1
f4
f1
f2
f1
f2
f3
f2
f3
f4
f3
f4
SEL 2
TS A
TS B
SEL 16k/$\overline{47k}$

3-14. TIMING CHART 3 (PB·PAUSE)


RF SW PULSE
f1/f3
f1/f3
f1/f3
f1/f3
SEL 1
"H"
f1/f3
f1/f3
f1/f3
f1/f3
SEL 2
"H/L"
"H/L"
"H/L"
"H/L"
TS A
"L"
TS B
SEL 16k/$\overline{47k}$
"H"

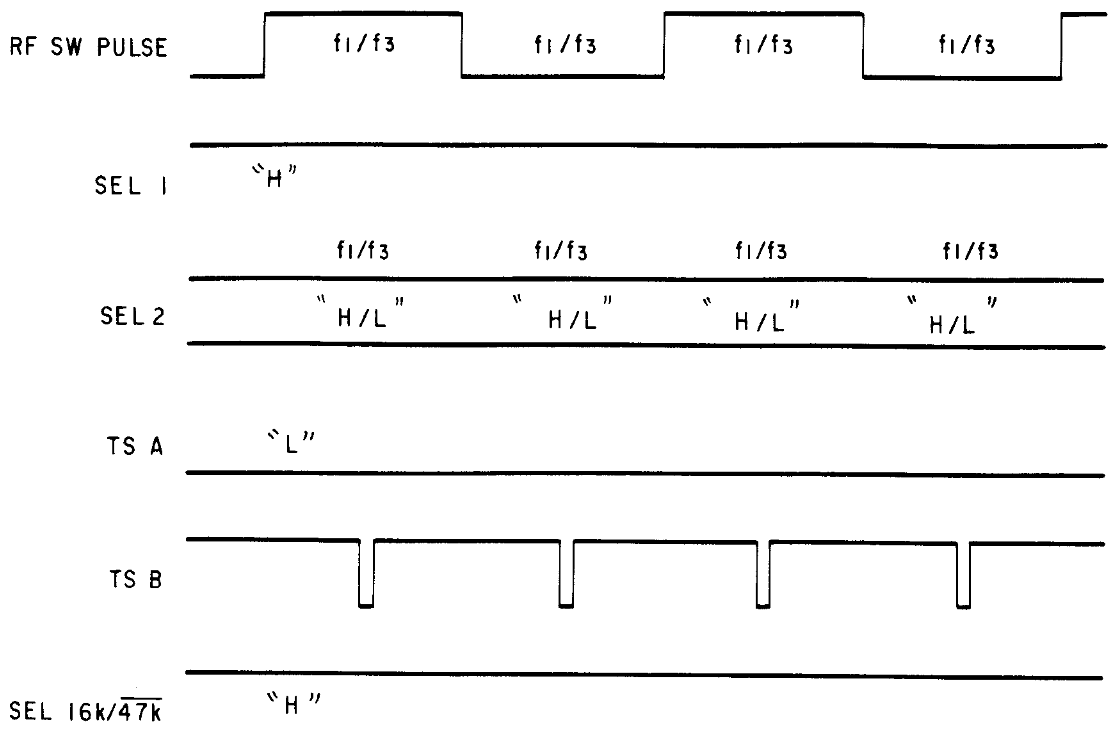
3-15. TIMING CHART 4 (CUE)


RF SW PULSE
SEL 1
f1
f2
f3
f4
SEL 2
TS A
"L"
TS B
SEL 16k/$\overline{47k}$

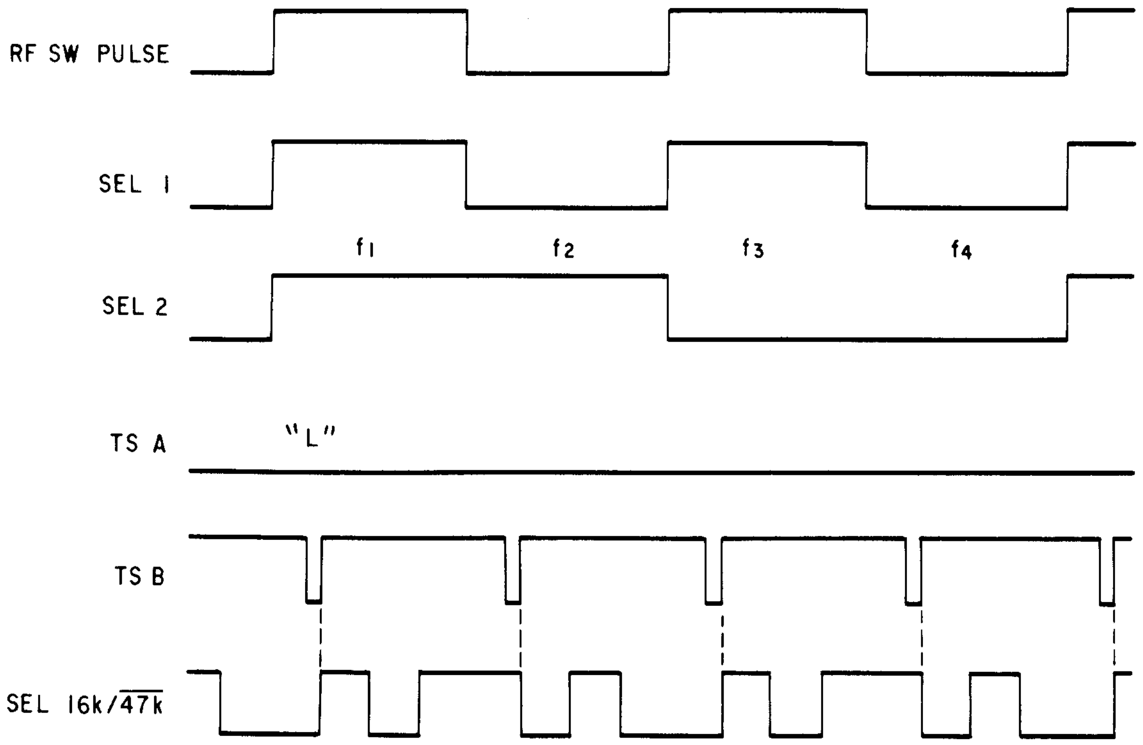
3-16. TIMIN

3-17. TIMIN

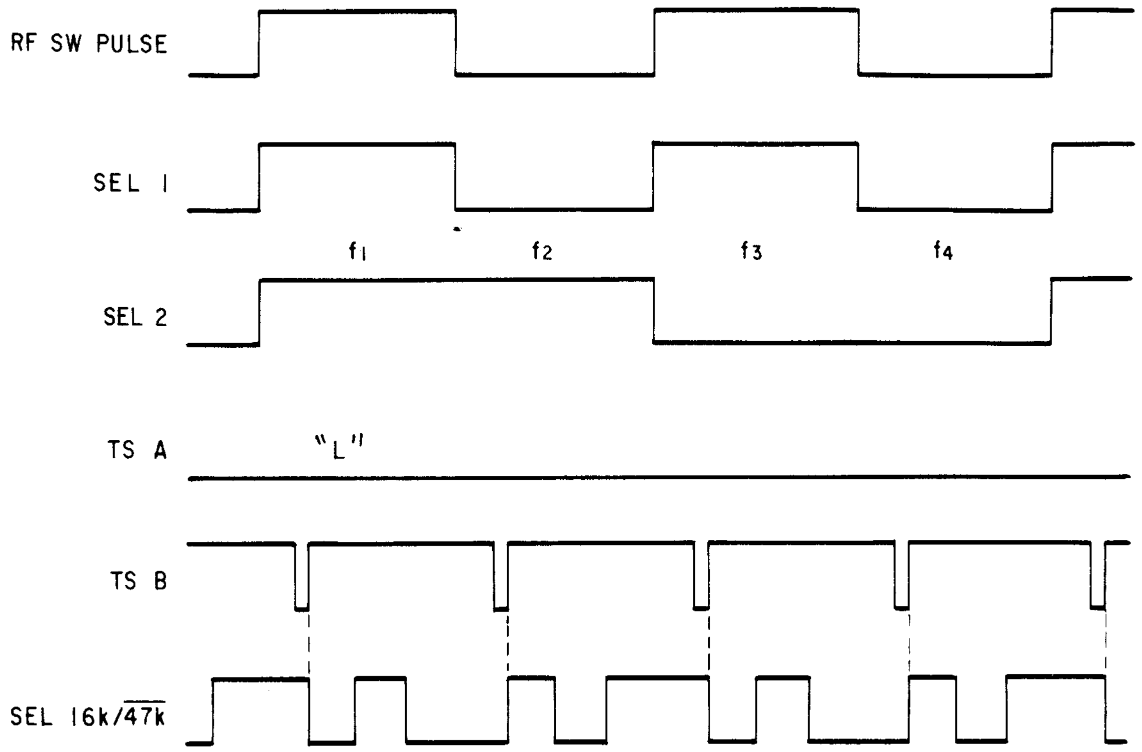
3-14. TIMING CHART 3 (PB·PAUSE)


RF SW PULSE
f1/f3
f1/f3
f1/f3
f1/f3
SEL 1
"H"
f1/f3
f1/f3
f1/f3
f1/f3
SEL 2
"H/L"
"H/L"
"H/L"
"H/L"
TS A
"L"
TS B
SEL 16k/$\overline{47k}$
"H"

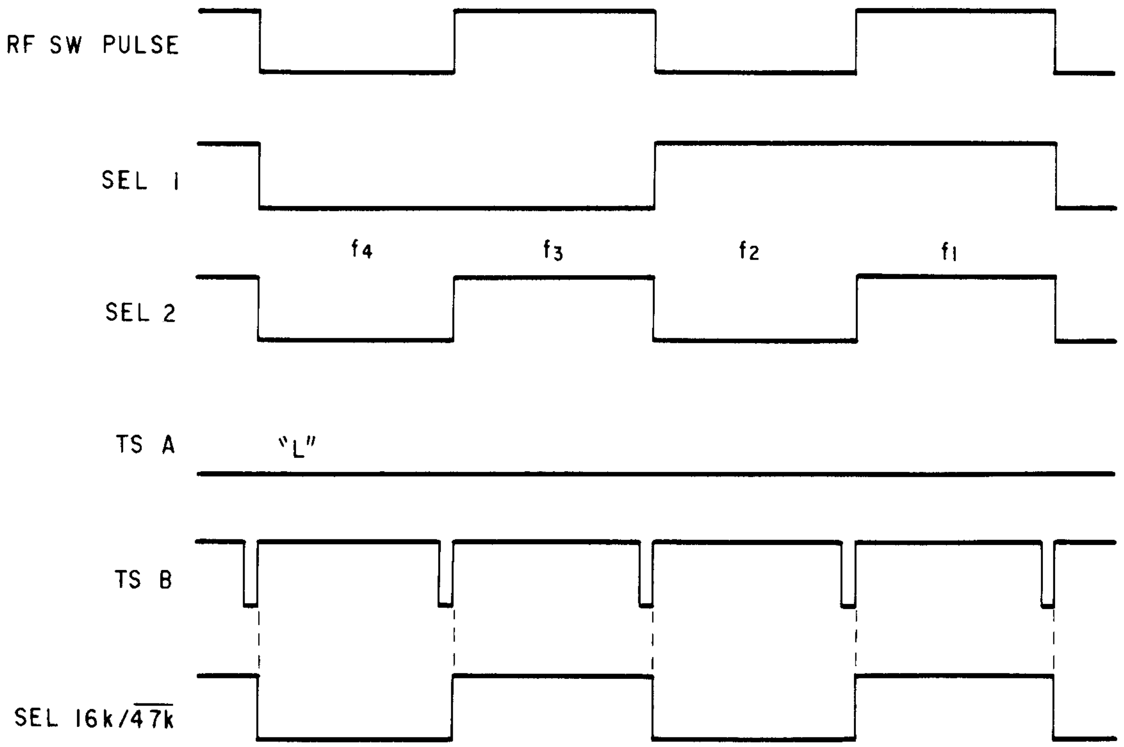
3-15. TIMING CHART 4 (CUE)


RF SW PULSE
SEL 1
f1
f2
f3
f4
SEL 2
TS A
"L"
TS B
SEL 16k/$\overline{47k}$

3-16. TIMING CHART 5 (REVIEW)


RF SW PULSE
SEL 1
f1
f2
f3
f4
SEL 2
TS A
"L"
TS B
SEL 16k/$\overline{47k}$

3-17. TIMING CHART 6 (REVERSE)


RF SW PULSE
SEL 1
f4
f3
f2
f1
SEL 2
TS A
"L"
TS B
SEL 16k/$\overline{47k}$

3-18. SYSTEM CONTROL – MECHANISM BLOCK INTERFACE

Signal name	I/O	REF.No., PIN No.	STOP	FF	REW	CUE	REV	PB	PB/ PAUSE	REC	REC/ PAUSE	RVS
MODE SW*1	I	SS-64 BOARD IC301 MATRIX IN	3	6	6	1	5	1	1	1	1	5
LOAD SW*2	I	SS-64 BOARD IC301 MATRIX IN	3	3	3	3	3	3	3	3	3	3
CASSETTE LOCK SW	I	SS-64 BOARD IC301 MATRIX IN	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
$\overline{\text{TAPE TOP}}$	I	SS-64 BOARD IC301 MATRIX IN	NC	NC	H	H/NC	H	NC	NC	NC	H	H
$\overline{\text{TAPE END}}$	I	SS-64 BOARD IC301 MATRIX IN	H/NC	H	NC	H	H	H	H	H	H	H
$\overline{\text{DEW (M)}}$	I	SS-64 BOARD IC301 MATRIX IN	"L" when dew condensation is generated (IC304 ①)									
REEL TA	I	SS-64 BOARD C301 MATRIX IN										
REEL TB	I	SS-64 BOARD C301 MATRIX IN										
REEL S	I	SS-64 BOARD C301 MATRIX IN										
CM CONT (CW)	O	SS-64 BOARD IC301 ⑯	L	L	L	L	L	L	L	L	L	L
CM CONT (CCW)	O	SS-64 BOARD IC301 ⑰	L	L	L	L	L	L	L	L	L	L
LM CONT (CW)	O	SS-64 BOARD IC301 ⑧	L	L	L	L	L	L	L	L	L	L
LM CONT (CCW)	O	SS-64 BOARD IC301 ⑨	L	L	L	L	L	L	L	L	L	L
$\overline{\text{BRAKE START}}$	O	SS-64 BOARD IC301 ㉘	H	H	H	H	H	H	H	H	H	H
$\overline{\text{BRAKE HOLD}}$	O	SS-64 BOARD IC301 ㉙	H	L	L	H	L	H	H	H	H	L
$\overline{\text{TAPE LED}}$	O	SS-64 BOARD IC301 ㉗	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3
REEL LED	O	SS-64 BOARD IC301 ⑲	A pulse of approximately 1kHz									

---

*1 See "Mode switch pattern"

*2 See "Loading switch pattern"

*3 H/L pulse

3-19. MODE SWITCH PATTERN

Rotating direction of mode switch

(↻) CW ←——→ CCW (↺)

Switch position (mode)		EJECT		LOAD		FF/ REW		STOP		FWD		RVS	
Switch pattern	7	4	7	2	7	6	7	3	7	1	7	5	7
MODE SW A	×	○	×	○	×	○	×	×	×	×	×	×	×
MODE SW B	×	○	×	×	×	×	×	×	×	○	×	○	×
MODE SW C	×	×	×	○	×	×	×	○	×	○	×	×	×

○ . . . Short-circuit
× . . . Open

3-20. LOADING SWITCH PATTERN

Rotating direction of loading switch

(↺)CCW ←——→ CW (↻)

Switch position (mode)	LOADING TOP		UNLOAD WAIT		DRUM START		T REEL START		LOADING END
Switch pattern	1	7	5	7	4	7	6	7	3
LOAD SW A	×	×	×	×	○	×	○	×	×
LOAD SW B	○	×	○	×	○	×	×	×	×
LOAD SW C	○	×	×	×	×	×	×	×	○

○ . . . Short-circuit
× . . . Open

3-21. CAMERA SYSTEM CONTROL CPU (IC601 on FC-10 Board) – PERIPHERAL CIRCUITS INTERFACE

Signal name	I/O	Pin No.	Input/Output level
WR	O	2	"H" when the color setting of wiper is at white, red, violet or yellow.
RESET	I	3	Normally "L". "H" pulse is input when the lithium battery is mounted or when the power supply turns ON without the lithium battery.
CL1	I	5	System clock oscillating pin (Oscillates only when S/S 5V is at ON. Oscillating frequency: Approx. 330kHz)
CL2	O	9	
DDS CS	I	10	Communication request signal ("H" pulse of V cycle) from mode control CPU (IC302 on SS-64 board)

RVS
5
3
ON
H
H
L
L
L
L
H
L
*3

3-19. MODE SWITCH PATTERN

Rotating direction of mode switch

(↷) CW ←——→ CCW (↶)

Switch position (mode)		EJECT		LOAD		FF/ REW		STOP		FWD		RVS	
Switch pattern	7	4	7	2	7	6	7	3	7	1	7	5	7
MODE SW A	×	○	×	○	×	○	×	×	×	×	×	×	×
MODE SW B	×	○	×	×	×	×	×	×	×	○	×	○	×
MODE SW C	×	×	×	○	×	×	×	○	×	○	×	×	×

○ . . . Short-circuit
× . . . Open

3-20. LOADING SWITCH PATTERN

Rotating direction of loading switch

(↶)CCW ←——→ CW (↷)

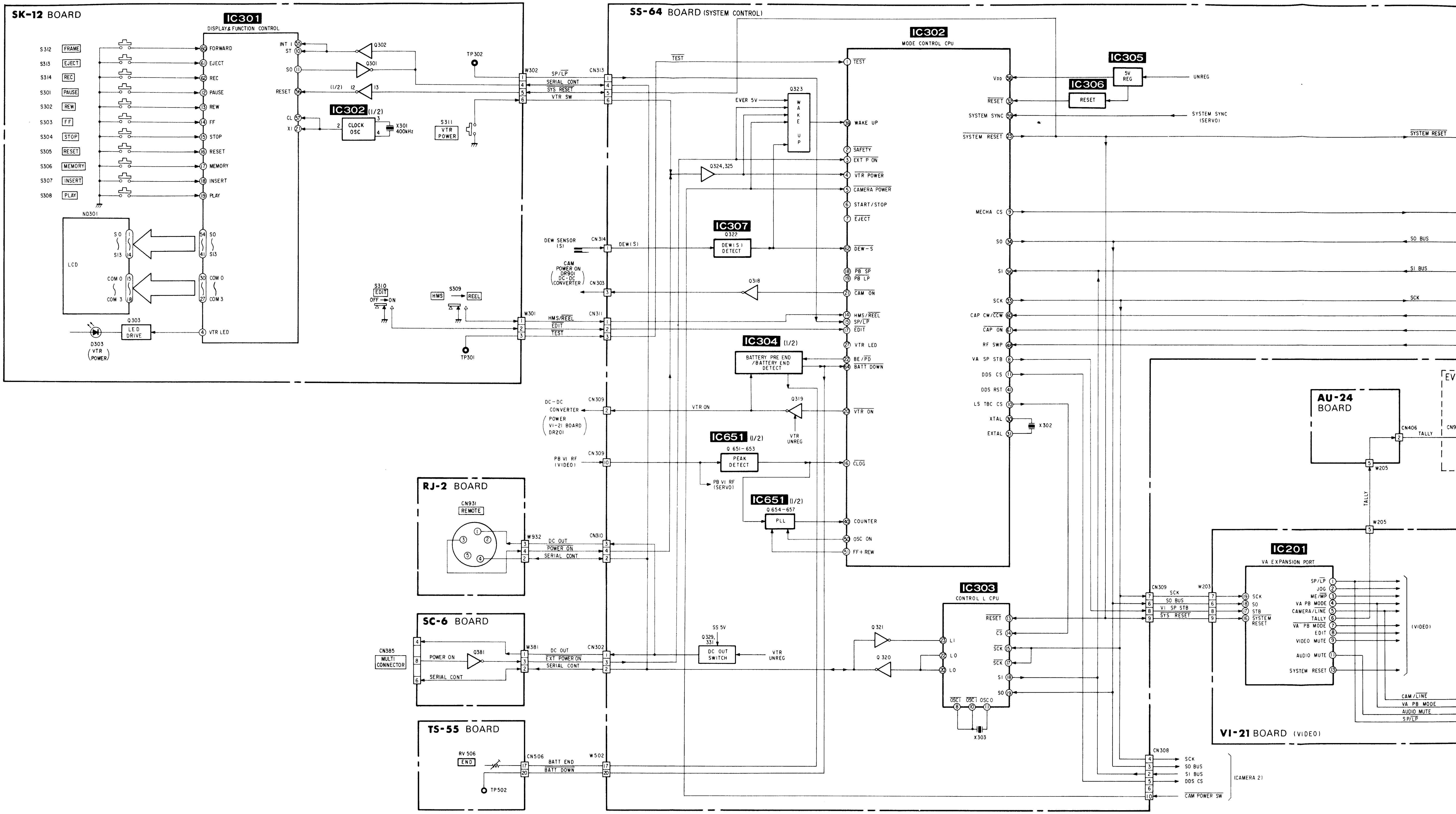
Switch position (mode)	LOADING TOP		UNLOAD WAIT		DRUM START		T REEL START		LOADING END
Switch pattern	1	7	5	7	4	7	6	7	3
LOAD SW A	×	×	×	×	○	×	○	×	×
LOAD SW B	○	×	○	×	○	×	×	×	×
LOAD SW C	○	×	×	×	×	×	×	×	○

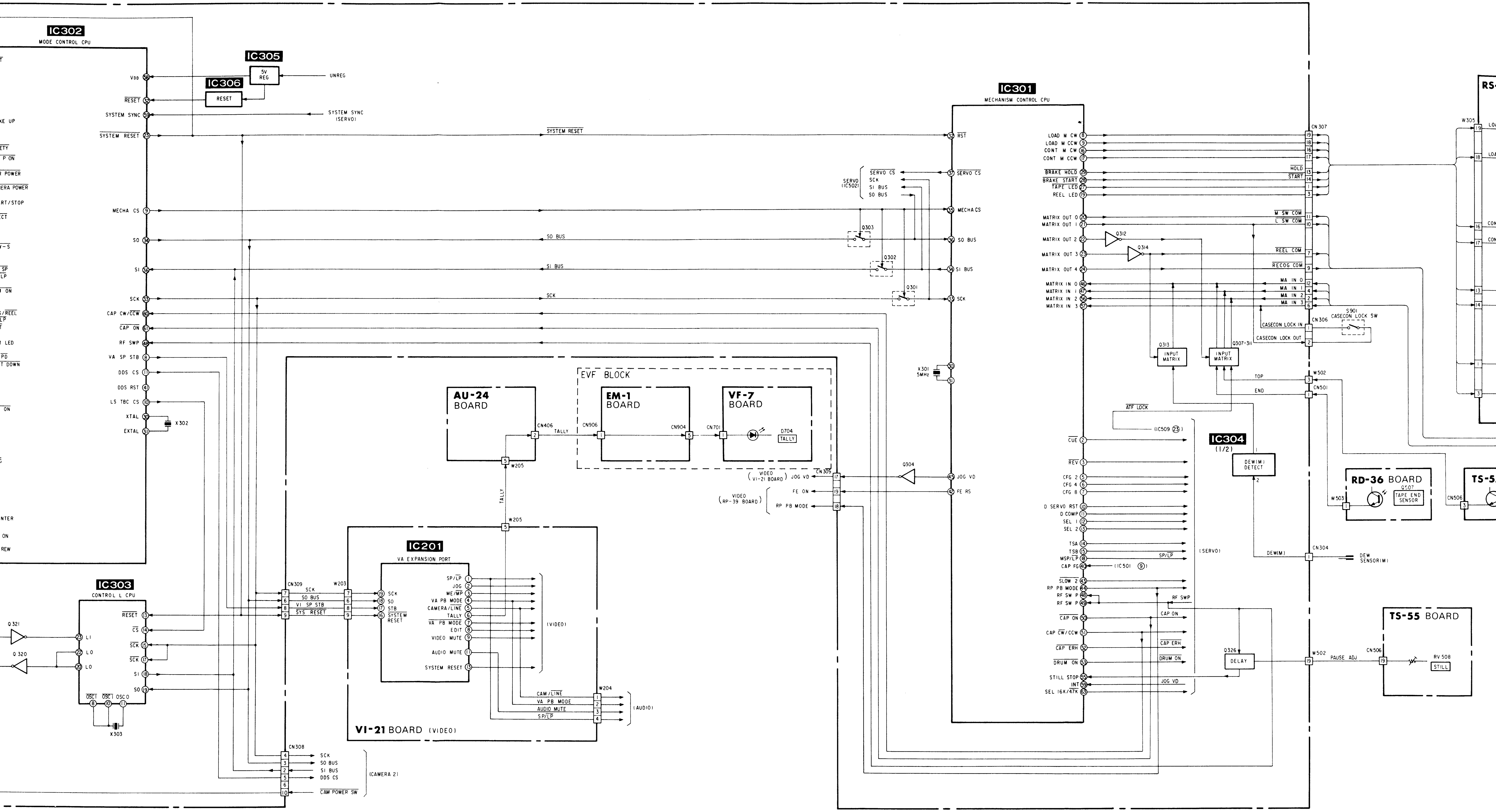
○ . . . Short-circuit
× . . . Open

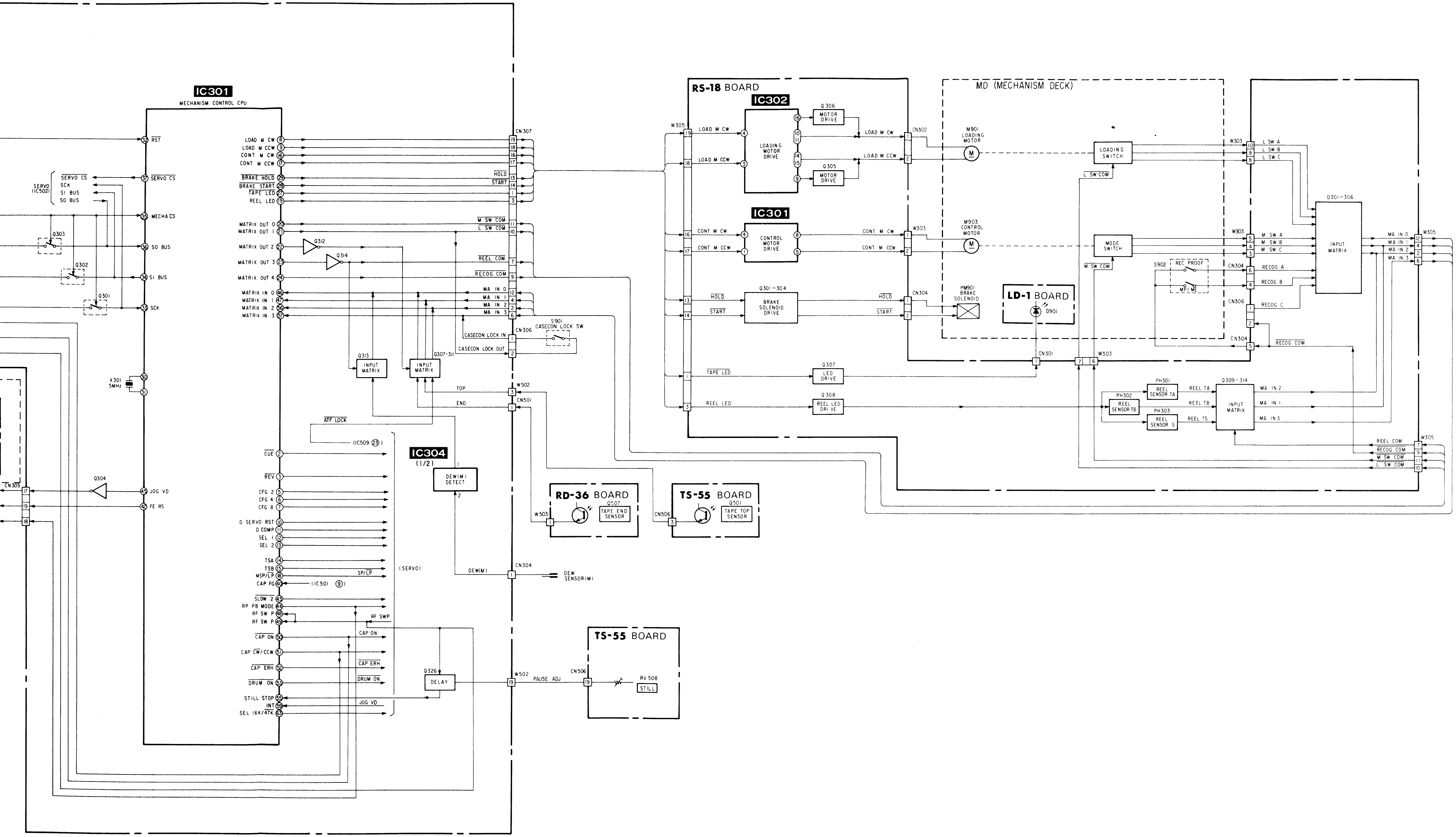
3-21. CAMERA SYSTEM CONTROL CPU (IC601 on FC-10 Board) – PERIPHERAL CIRCUITS INTERFACE

Signal name	I/O	Pin No.	Input/Output level
WR	O	2	"H" when the color setting of wiper is at white, red, violet or yellow.
RESET	I	3	Normally "L". "H" pulse is input when the lithium battery is mounted or when the power supply turns ON without the lithium battery.
CL1	I	5	System clock oscillating pin (Oscillates only when S/S 5V is at ON. Oscillating frequency: Approx. 330kHz)
CL2	O	9	
DDS CS	I	10	Communication request signal ("H" pulse of V cycle) from mode control CPU (IC302 on SS-64 board)
POWER DOWN	I	11	"L" when the power supply (S/S 5V) of VTR section is at ON.
$\overline{\mathrm{SCK}}$	I/O	12	Communication serial data transfer clock input/output ("L" pulse train of V cycle) with mode control CPU and character generator (IC675/676 on CG-1 board)
SO	O	15	Serial data output ("H" pulse train of V cycle) to mode control CPU and character generator
SI	I	16	Serial data input ("H" pulse train of V cycle) from mode control CPU
LI DWN	I	17	Detection input of lithium battery down. "H" when battery is down.
$\overline{\mathrm{CAM\ DWN}}$	I	18	"H" when the power supply (F 5V) of camera section is at ON.
TEST	I	19	Pull-up to "H" level. TEST mode when at "L".
BUS ON	O	20	Communication selection signal of mode control CPU and character generator ("H" level during communication with mode control CPU. Communication cycle is V cycle.)
STB1	O	21	Strobe signal for EVF character generator (IC676 on CG-1 board) (Almost "H" pulse output of V cycle)
STB2	O	22	Strobe signal for video output character generator (IC675 on CG-1 board) ("H" pulse output of 4V cycles)
ZOOM TELE	O	23	"H" when the zoom ring is turned to TELE side.
ZOOM WIDE	O	24	"H" when the zoom ring is turned to WIDE side.
$\overline{\mathrm{INT\ REC\ LED}}$	O	25	"L" during INTERVAL REC mode.
FD/$\overline{\mathrm{WIPER}}$	O	26	Selection output of fader mode and wiper mode ("H" during fader mode)
MD4	O	28	Key matrix scanning output ("L" pulse of 4V cycles)
MD5	O	30	Key matrix scanning output ("H" pulse of 4V cycles)
X1	I	32	Timer clock oscillating pin (Oscillates regularly when the lithium battery is mounted. Oscillating frequency is approx. 32.8kHz.)
X2	O	34	
$\overline{\mathrm{MD0}}$	O	36	Key matrix scanning output ("L" pulse of 4V cycles)
$\overline{\mathrm{MD1}}$	O	37	
$\overline{\mathrm{MD2}}$	O	38	
$\overline{\mathrm{MD3}}$	O	39	
MI0	I	41	Key matrix scanning input
MI1	I	42	
MI2	I	43	
MI3	I	44	
FD0	O	46	Normally "L" level. "H" pulse output during operating of fader or wiper.
FD1	O	47	
FD2	O	48	
FD3	O	49	
FD4	O	50	
WB	O	51	"H" when the color setting of wiper is at white, blue, cyan or violet.
WG	O	52	"H" when the color setting of wiper is at white, green, cyan or yellow.

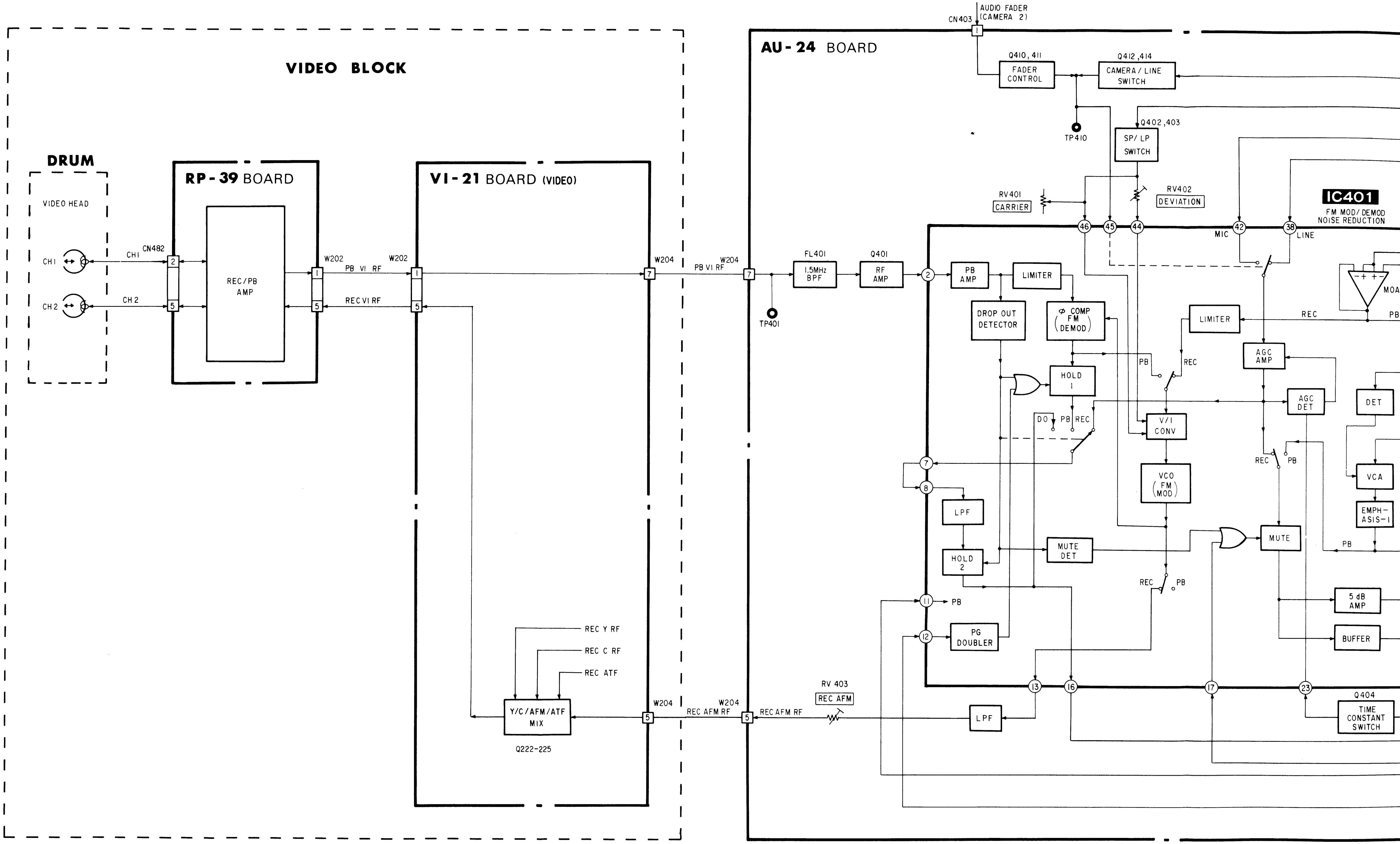
3-22. SYSTEM CONTROL BLOCK DIAGRAM

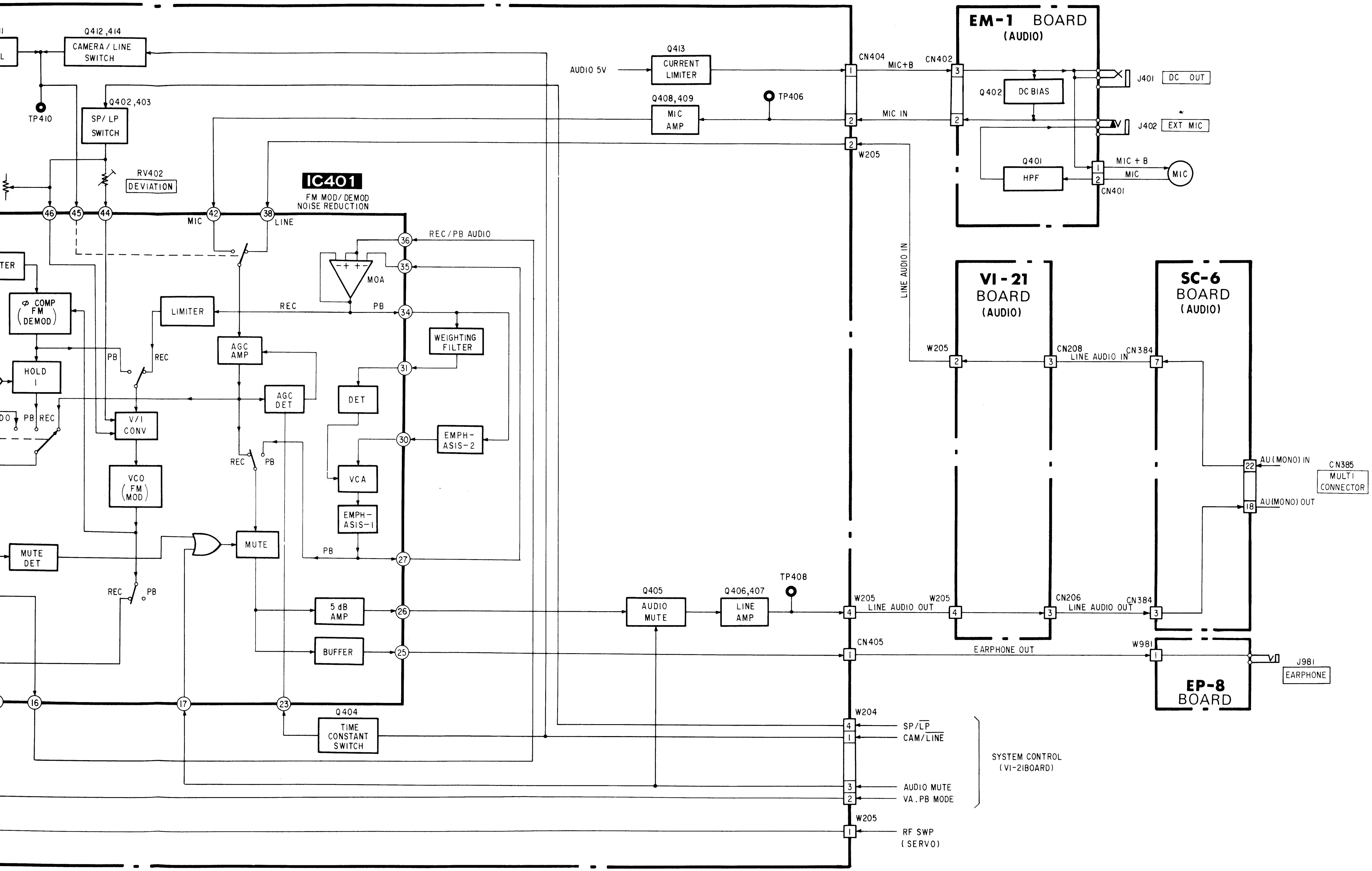

SK-12 BOARD
IC301
DISPLAY & FUNCTION CONTROL
S312 FRAME
S313 EJECT
S314 REC
S301 PAUSE
S302 REW
S303 FF
S304 STOP
S305 RESET
S306 MEMORY
S307 INSERT
S308 PLAY
FORWARD
EJECT
REC
PAUSE
REW
FF
STOP
RESET
MEMORY
INSERT
PLAY
ND301
LCD
SO
S13
COM 0
COM 3
Q303
LED DRIVE
D303 (VTR POWER)
VTR LED
INT 1
ST
SO
RESET
CL
X1
Q302
Q301
IC302 (1/2)
CLOCK OSC
X301 400kHz
TP302
S311 VTR POWER
S310 EDIT OFF ON
S309 HMS REEL
TP301
W302
W301
SP/LP
SERIAL CONT
SYS RESET
VTR SW
HMS/REEL
EDIT
TEST
CN313
CN311
SS-64 BOARD (SYSTEM CONTROL)
IC302
MODE CONTROL CPU
TEST
WAKE UP
SAFETY
EXT P ON
VTR POWER
CAMERA POWER
START/STOP
EJECT
DEW-S
PB SP
PB LP
CAM ON
HMS/REEL
SP/LP
EDIT
VTR LED
BE/PD
BATT DOWN
VTR ON
CLOG
COUNTER
OSC ON
FF+REW
VDD
RESET
SYSTEM SYNC
SYSTEM RESET
MECHA CS
SO
SI
SCK
CAP CW/CCW
CAP ON
RF SWP
VA SP STB
DDS CS
DDS RST
LS TBC CS
XTAL
EXTAL
X302
IC305
5V REG
UNREG
IC306
RESET
SYSTEM SYNC (SERVO)
SO BUS
SI BUS
SCK
EVER 5V
Q323
WAKE UP
Q324,325
IC307
Q322
DEW(S) DETECT
DEW SENSOR (S)
CN314
DEW(S)
CAM POWER ON DR901 (DC-DC CONVERTER)
CN303
Q318
IC304 (1/2)
BATTERY PRE END /BATTERY END DETECT
DC-DC CONVERTER (POWER VI-21 BOARD DR201)
CN309
VTR ON
Q319
VTR UNREG
IC651 (1/2)
Q 651-653
PEAK DETECT
PB VI RF (VIDEO)
PB VI RF (SERVO)
IC651 (1/2)
Q 654-657
PLL
RJ-2 BOARD
CN931 REMOTE
W932
DC OUT
POWER ON
SERIAL CONT
CN310
SC-6 BOARD
CN385 MULTI CONNECTOR
POWER ON
Q381
SERIAL CONT
W381
DC OUT
EXT POWER ON
SERIAL CONT
CN302
SS 5V
Q329, 331
DC OUT SWITCH
VTR UNREG
TS-55 BOARD
RV506 END
TP502
CN506
BATT END
BATT DOWN
W502
IC303
CONTROL L CPU
RESET
CS
SCK
SCK
SI
SO
LI
LO
LO
Q321
Q320
OSCI
OSCI
OSCO
X303
AU-24 BOARD
CN406
TALLY
W205
IC201
VA EXPANSION PORT
SCK
SO
STB
SYSTEM RESET
SP/LP
JOG
ME/MP
VA PB MODE
CAMERA/LINE
TALLY
VA PB MODE
EDIT
VIDEO MUTE
AUDIO MUTE
SYSTEM RESET
(VIDEO)
CN309
W203
SCK
SO BUS
VI SP STB
SYS RESET
CAM/LINE
VA PB MODE
AUDIO MUTE
SP/LP
VI-21 BOARD (VIDEO)
CN308
SCK
SO BUS
SI BUS
DDS CS
CAM POWER SW
(CAMERA 2)
EV
CN9


IC302
MODE CONTROL CPU
VDD
RESET
SYSTEM SYNC
SYSTEM RESET
MECHA CS
SO
SI
SCK
CAP CW/CCW
CAP ON
RF SWP
VA SP STB
DDS CS
DDS RST
LS TBC CS
XTAL
EXTAL
X302
IC305
5V REG
UNREG
IC306
RESET
SYSTEM SYNC (SERVO)
SYSTEM RESET
SO BUS
SI BUS
SCK
IC303
CONTROL L CPU
RESET
CS
SCK
SCK
SI
SO
LI
LO
LO
OSCI
OSCI
OSC O
X303
Q321
Q320
CN309
SCK
SO BUS
VI SP STB
SYS RESET
W203
CN308
SCK
SO BUS
SI BUS
DDS CS
CAM POWER SW
(CAMERA 2)
AU-24 BOARD
CN406
TALLY
W205
EVF BLOCK
EM-1 BOARD
CN906
CN904
VF-7 BOARD
CN701
D704
TALLY
IC201
VA EXPANSION PORT
SCK
SO
STB
SYSTEM RESET
SP/LP
JOG
ME/MP
VA PB MODE
CAMERA/LINE
TALLY
VA PB MODE
EDIT
VIDEO MUTE
AUDIO MUTE
SYSTEM RESET
(VIDEO)
W204
CAM/LINE
VA PB MODE
AUDIO MUTE
SP/LP
(AUDIO)
VI-21 BOARD (VIDEO)
(VIDEO VI-21 BOARD)
JOG VD
FE ON
(VIDEO RP-39 BOARD)
RP PB MODE
CN305
SERVO (IC502)
SERVO CS
SCK
SI BUS
SO BUS
Q303
Q302
Q301
Q304
IC301
MECHANISM CONTROL CPU
RST
SERVO CS
MECHA CS
SO BUS
SI BUS
SCK
X301 5MHz
JOG VD
FE RS
LOAD M CW
LOAD M CCW
CONT M CW
CONT M CCW
BRAKE HOLD
BRAKE START
TAPE LED
REEL LED
MATRIX OUT 0
MATRIX OUT 1
MATRIX OUT 2
MATRIX OUT 3
MATRIX OUT 4
MATRIX IN 0
MATRIX IN 1
MATRIX IN 2
MATRIX IN 3
Q312
Q314
Q313
INPUT MATRIX
Q307-311
INPUT MATRIX
ATF LOCK
(IC509 ㉓)
CUE
REV
CFG 2
CFG 4
CFG 8
D SERVO RST
D COMP
SEL 1
SEL 2
TSA
TSB
MSP/LP
CAP FG
(IC501 ⑨)
SP/LP
(SERVO)
SLOW 2
RP PB MODE
RF SW P
RF SW P
RF SWP
CAP ON
CAP ON
CAP CW/CCW
CAP ERH
CAP ERH
DRUM ON
DRUM ON
STILL STOP
INT
SEL 16K/47K
JOG VD
IC304 (1/2)
DEW(M) DETECT
Q326
DELAY
DEW(M)
CN307
HOLD
START
M SW COM
L SW COM
REEL COM
RECOG COM
MA IN 0
MA IN 1
MA IN 2
MA IN 3
CN306
S901 CASECON LOCK SW
CASECON LOCK IN
CASECON LOCK OUT
W502
TOP
CN501
END
CN304
DEW SENSOR(M)
W502
PAUSE ADJ
CN506
TS-55 BOARD
RV508
STILL
RD-36 BOARD
Q507
TAPE END SENSOR
W503
CN506
TS-5
RS
W305
LOA
LOA
CON
CON

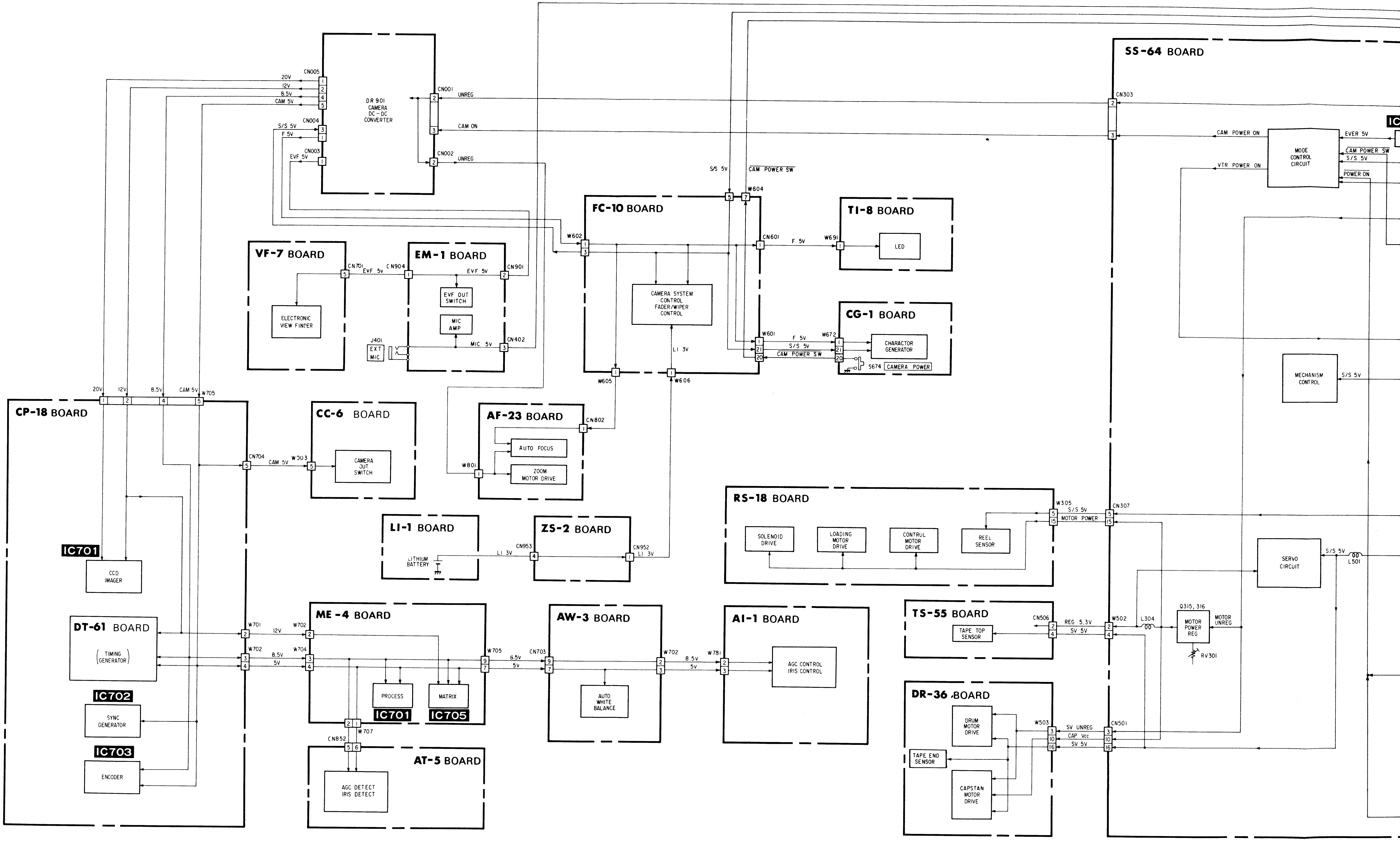

IC301
MECHANISM CONTROL CPU
RST
SERVO CS
SERVO (IC502)
SCK
SI BUS
SO BUS
MECHA CS
Q303
Q302
Q301
X301 5MHz
LOAD M CW
LOAD M CCW
CONT M CW
CONT M CCW
BRAKE HOLD
BRAKE START
TAPE LED
REEL LED
MATRIX OUT 0
MATRIX OUT 1
MATRIX OUT 2
MATRIX OUT 3
MATRIX OUT 4
MATRIX IN 0
MATRIX IN 1
MATRIX IN 2
MATRIX IN 3
Q312
Q314
Q313
INPUT MATRIX
Q307-311
CN307
HOLD
START
M SW COM
L SW COM
REEL COM
RECOG COM
MA IN 0
MA IN 1
MA IN 2
MA IN 3
CN306
CASECON LOCK IN
CASECON LOCK OUT
S901
CASECON LOCK SW
W502
TOP
CN501
END
ATF LOCK
(IC509 ㉓)
IC304
(1/2)
DEW(M) DETECT
CUE
REV
CFG 2
CFG 4
CFG 8
D SERVO RST
D COMP
SEL 1
SEL 2
TSA
TSB
MSP/LP
SP/LP
CAP FG
(IC501 ⑨)
(SERVO)
SLOW 2
RP PB MODE
RF SW P
RF SW P
RF SWP
CAP ON
CAP CW/CCW
CAP ERH
DRUM ON
STILL STOP
INT
JOG VD
SEL 16K/47K
Q304
JOG VD
FE RS
CN309
CN304
DEW(M)
DEW SENSOR(M)
Q326
DELAY
PAUSE ADJ
CN506
TS-55 BOARD
RV508
STILL
RD-36 BOARD
W503
Q507
TAPE END SENSOR
Q501
TAPE TOP SENSOR
RS-18 BOARD
W305
IC302
LOADING MOTOR DRIVE
Q306
MOTOR DRIVE
Q305
CN302
IC301
CONTROL MOTOR DRIVE
W303
Q301-304
BRAKE SOLENOID DRIVE
Q307
LED DRIVE
Q308
REEL LED DRIVE
CN301
MD (MECHANISM DECK)
M901
LOADING MOTOR
M903
CONTROL MOTOR
PM901
BRAKE SOLENOID
LD-1 BOARD
D901
LOADING SWITCH
MODE SWITCH
S902
REC PROOF
MP/ME
L SW A
L SW B
L SW C
M SW A
M SW B
M SW C
RECOG A
RECOG B
RECOG C
D301-306
PH301
REEL SENSOR TA
PH302
REEL SENSOR TB
PH303
REEL SENSOR S
REEL TA
REEL TB
REEL TS
Q309-314

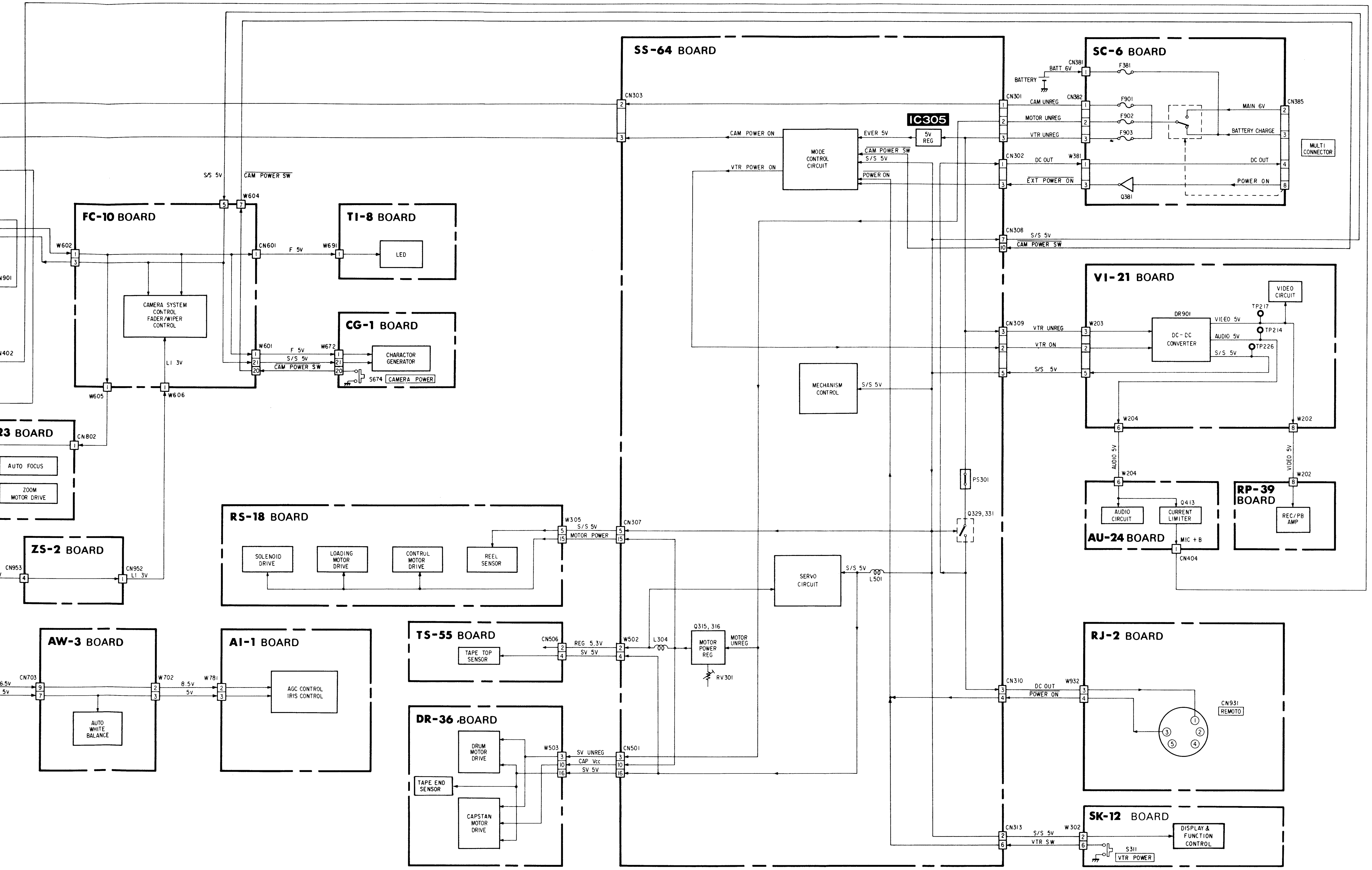
3-23. AUDIO BLOCK DIAGRAM


VIDEO BLOCK
DRUM
VIDEO HEAD
CH1
CH2
CN482
RP-39 BOARD
REC/PB AMP
W202
PB V1 RF
REC V1 RF
V1-21 BOARD (VIDEO)
W204
PB V1 RF
REC Y RF
REC C RF
REC ATF
Y/C/AFM/ATF MIX
Q222-225
REC AFM RF
AU-24 BOARD
CN403
AUDIO FADER (CAMERA 2)
Q410, 411
FADER CONTROL
Q412, 414
CAMERA/LINE SWITCH
TP410
Q402, 403
SP/LP SWITCH
RV401
CARRIER
RV402
DEVIATION
IC401
FM MOD/DEMOD NOISE REDUCTION
MIC
LINE
FL401
1.5MHz BPF
Q401
RF AMP
TP401
PB AMP
LIMITER
DROP OUT DETECTOR
Φ COMP (FM DEMOD)
HOLD 1
DO
PB
REC
LIMITER
AGC AMP
AGC DET
DET
V/I CONV
VCO (FM MOD)
VCA
EMPHASIS-I
MOA
LPF
HOLD 2
MUTE DET
MUTE
5 dB AMP
BUFFER
PG DOUBLER
RV 403
REC AFM
LPF
Q404
TIME CONSTANT SWITCH
46
45
44
42
38
2
7
8
11
12
13
16
17
23
1
5


Q412,414
CAMERA / LINE SWITCH
Q402,403
SP/ LP SWITCH
TP410
RV402
DEVIATION
IC401
FM MOD/ DEMOD NOISE REDUCTION
46
45
44
MIC
42
38
LINE
36
REC/PB AUDIO
35
MOA
34
REC
PB
LIMITER
WEIGHTING FILTER
φ COMP (FM DEMOD)
HOLD I
PB
REC
AGC AMP
AGC DET
31
DET
V/I CONV
30
EMPH-ASIS-2
REC
PB
VCA
VCO (FM MOD)
EMPH-ASIS-1
MUTE DET
MUTE
PB
27
REC
PB
5 dB AMP
26
BUFFER
25
16
17
23
Q404
TIME CONSTANT SWITCH
Q413
AUDIO 5V
CURRENT LIMITER
Q408,409
MIC AMP
TP406
CN404
MIC+B
CN402
MIC IN
W205
LINE AUDIO IN
Q405
AUDIO MUTE
Q406,407
LINE AMP
TP408
W205
LINE AUDIO OUT
CN405
EARPHONE OUT
W204
SP/LP
CAM/LINE
AUDIO MUTE
VA.PB MODE
SYSTEM CONTROL (VI-21BOARD)
W205
RF SWP (SERVO)
EM-1 BOARD (AUDIO)
Q402
DC BIAS
J401
DC OUT
J402
EXT MIC
Q401
HPF
MIC + B
MIC
CN401
MIC
VI-21 BOARD (AUDIO)
W205
CN208
LINE AUDIO IN
W205
CN206
LINE AUDIO OUT
SC-6 BOARD (AUDIO)
CN384
AU(MONO) IN
AU(MONO) OUT
CN385
MULTI CONNECTOR
CN384
W981
J981
EARPHONE
EP-8 BOARD

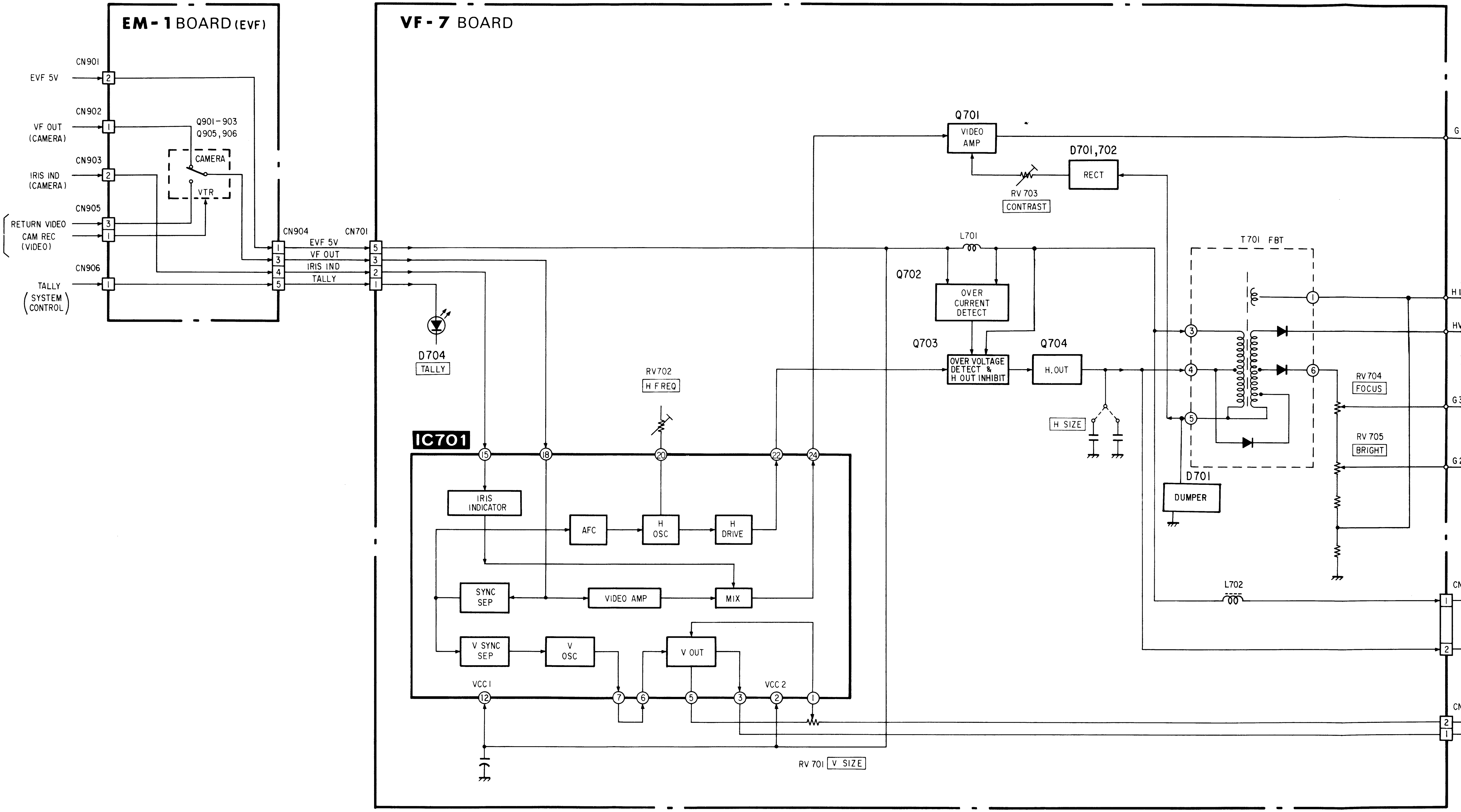
3-24. POWER BLOCK DIAGRAM

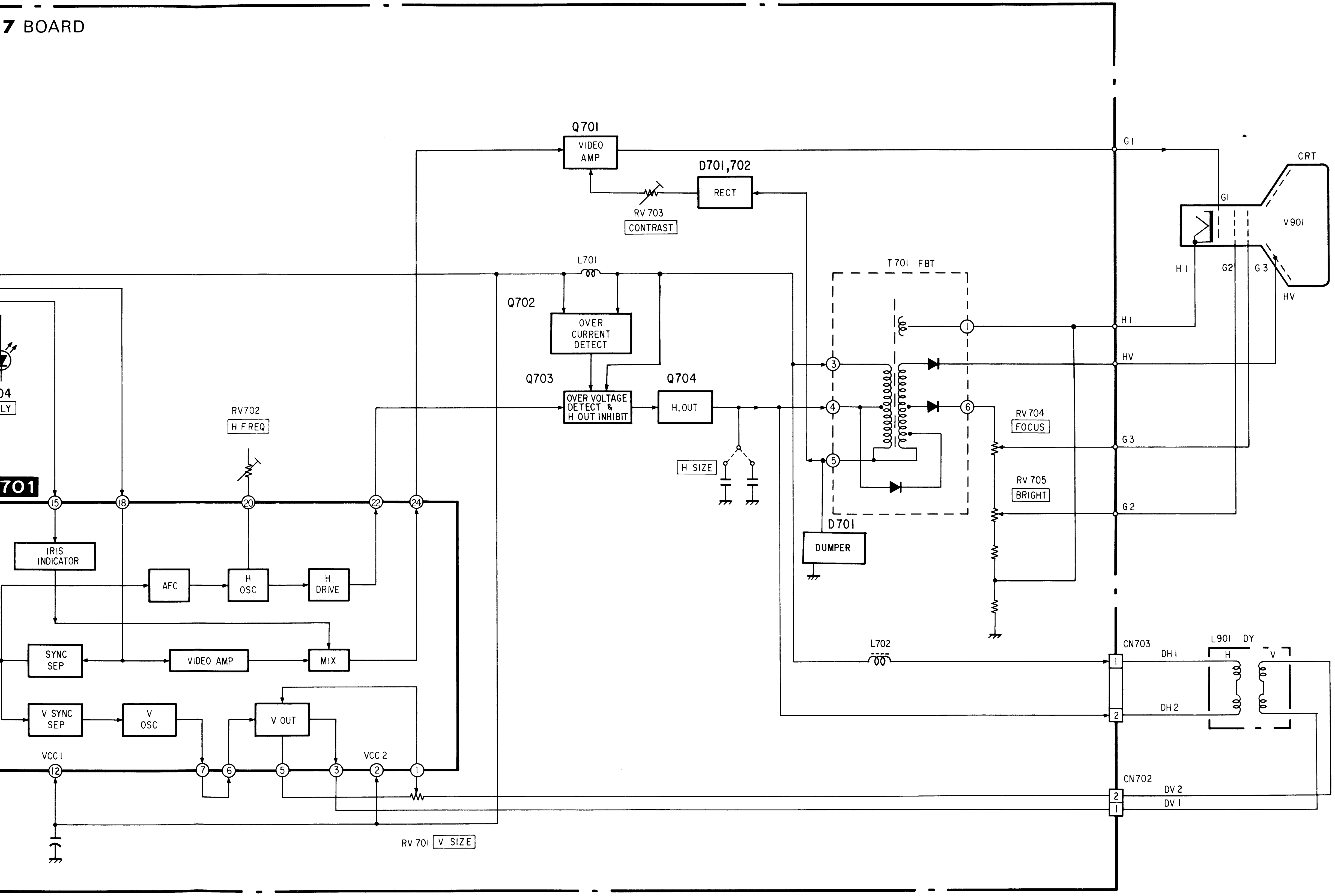

DR901 CAMERA DC-DC CONVERTER
CN005
20V
12V
8.5V
CAM 5V
CN004
S/S 5V
F 5V
CN003
EVF 5V
CN001
UNREG
CAM ON
CN002
UNREG
VF-7 BOARD
ELECTRONIC VIEW FINDER
CN701
EVF 5V
CN904
EM-1 BOARD
EVF 5V
CN901
EVF OUT SWITCH
MIC AMP
J401
EXT MIC
MIC 5V
CN402
FC-10 BOARD
W602
CAMERA SYSTEM CONTROL FADER/WIPER CONTROL
LI 3V
W605
W606
S/S 5V
CAM POWER SW
W604
CN601
F 5V
W691
T I-8 BOARD
LED
W601
F 5V
S/S 5V
CAM POWER SW
W672
CG-1 BOARD
CHARACTOR GENERATOR
S674
CAMERA POWER
CP-18 BOARD
W705
20V
12V
8.5V
CAM 5V
IC701
CCD IMAGER
DT-61 BOARD
TIMING GENERATOR
IC702
SYNC GENERATOR
IC703
ENCODER
CN704
CAM 5V
W003
CC-6 BOARD
CAMERA OUT SWITCH
AF-23 BOARD
CN802
AUTO FOCUS
ZOOM MOTOR DRIVE
W801
LI-1 BOARD
LITHIUM BATTERY
LI 3V
CN953
ZS-2 BOARD
CN952
LI 3V
W701
12V
W702
W702
8.5V
5V
W704
ME-4 BOARD
PROCESS
MATRIX
IC701
IC705
W705
8.5V
5V
CN703
W707
CN852
AT-5 BOARD
AGC DETECT IRIS DETECT
AW-3 BOARD
AUTO WHITE BALANCE
W702
8.5V
5V
W781
AI-1 BOARD
AGC CONTROL IRIS CONTROL
RS-18 BOARD
SOLENOID DRIVE
LOADING MOTOR DRIVE
CONTROL MOTOR DRIVE
REEL SENSOR
W305
S/S 5V
MOTOR POWER
CN307
TS-55 BOARD
TAPE TOP SENSOR
CN506
REG 5.3V
5V 5V
W502
DR-36 BOARD
DRUM MOTOR DRIVE
TAPE END SENSOR
CAPSTAN MOTOR DRIVE
W503
5V UNREG
CAP Vcc
5V 5V
CN501
SS-64 BOARD
CN303
CAM POWER ON
VTR POWER ON
MODE CONTROL CIRCUIT
EVER 5V
CAM POWER SW
S/S 5V
POWER ON
IC
MECHANISM CONTROL
S/S 5V
SERVO CIRCUIT
S/S 5V
L501
L304
Q315, 316
MOTOR POWER REG
MOTOR UNREG
RV301



SS-64 BOARD
SC-6 BOARD
FC-10 BOARD
TI-8 BOARD
CG-1 BOARD
23 BOARD
ZS-2 BOARD
RS-18 BOARD
AW-3 BOARD
AI-1 BOARD
TS-55 BOARD
DR-36 BOARD
VI-21 BOARD
AU-24 BOARD
RP-39 BOARD
RJ-2 BOARD
SK-12 BOARD
IC305
5V REG
MODE CONTROL CIRCUIT
MECHANISM CONTROL
SERVO CIRCUIT
MOTOR POWER REG
Q315, 316
RV301
L304
L501
PS301
Q329, 331
CN303
CN301
CN302
CN308
CN309
CN307
CN310
CN313
CN501
W502
CAM POWER ON
VTR POWER ON
EVER 5V
CAM POWER SW
S/S 5V
POWER ON
MOTOR UNREG
BATTERY
BATT 6V
CN381
CN382
CN385
F381
F901
F902
F903
CAM UNREG
VTR UNREG
DC OUT
W381
EXT POWER ON
Q381
MAIN 6V
BATTERY CHARGE
POWER ON
MULTI CONNECTOR
S/S 5V
CAM POWER SW
W604
W602
W601
CN601
F 5V
W691
LED
W672
CHARACTOR GENERATOR
S674
CAMERA POWER
CAMERA SYSTEM CONTROL FADER/WIPER CONTROL
L1 3V
W605
W606
W901
W402
CN802
AUTO FOCUS
ZOOM MOTOR DRIVE
CN953
CN952
L1 3V
W305
MOTOR POWER
SOLENOID DRIVE
LOADING MOTOR DRIVE
CONTROL MOTOR DRIVE
REEL SENSOR
CN703
W702
W781
8.5V
5V
AUTO WHITE BALANCE
AGC CONTROL IRIS CONTROL
CN506
REG 5.3V
SV 5V
TAPE TOP SENSOR
W503
SV UNREG
CAP Vcc
DRUM MOTOR DRIVE
TAPE END SENSOR
CAPSTAN MOTOR DRIVE
W203
DR901
DC-DC CONVERTER
VIDEO 5V
AUDIO 5V
VIDEO CIRCUIT
TP217
TP214
TP226
VTR ON
W204
W202
AUDIO CIRCUIT
CURRENT LIMITER
Q413
MIC + B
CN404
REC/PB AMP
W932
CN931
REMOTO
W302
VTR SW
S311
VTR POWER
DISPLAY & FUNCTION CONTROL

3-25. ELECTRONIC VIEW FINDER BLOCK DIAGRAM


EM-1 BOARD (EVF)
CN901
EVF 5V
CN902
VF OUT (CAMERA)
Q901-903
Q905,906
CAMERA
VTR
CN903
IRIS IND (CAMERA)
CN905
RETURN VIDEO
CAM REC (VIDEO)
CN906
TALLY (SYSTEM CONTROL)
CN904
CN701
EVF 5V
VF OUT
IRIS IND
TALLY
VF-7 BOARD
D704
TALLY
Q701
VIDEO AMP
D701,702
RECT
RV 703
CONTRAST
L701
Q702
OVER CURRENT DETECT
Q703
OVER VOLTAGE DETECT & H OUT INHIBIT
Q704
H.OUT
H SIZE
T701 FBT
RV702
H FREQ
IC701
IRIS INDICATOR
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP
MIX
V SYNC SEP
V OSC
V OUT
VCC 1
VCC 2
RV 701
V SIZE
RV704
FOCUS
RV 705
BRIGHT
D701
DUMPER
L702
G
HI
HV
G3
G2
CN
CN

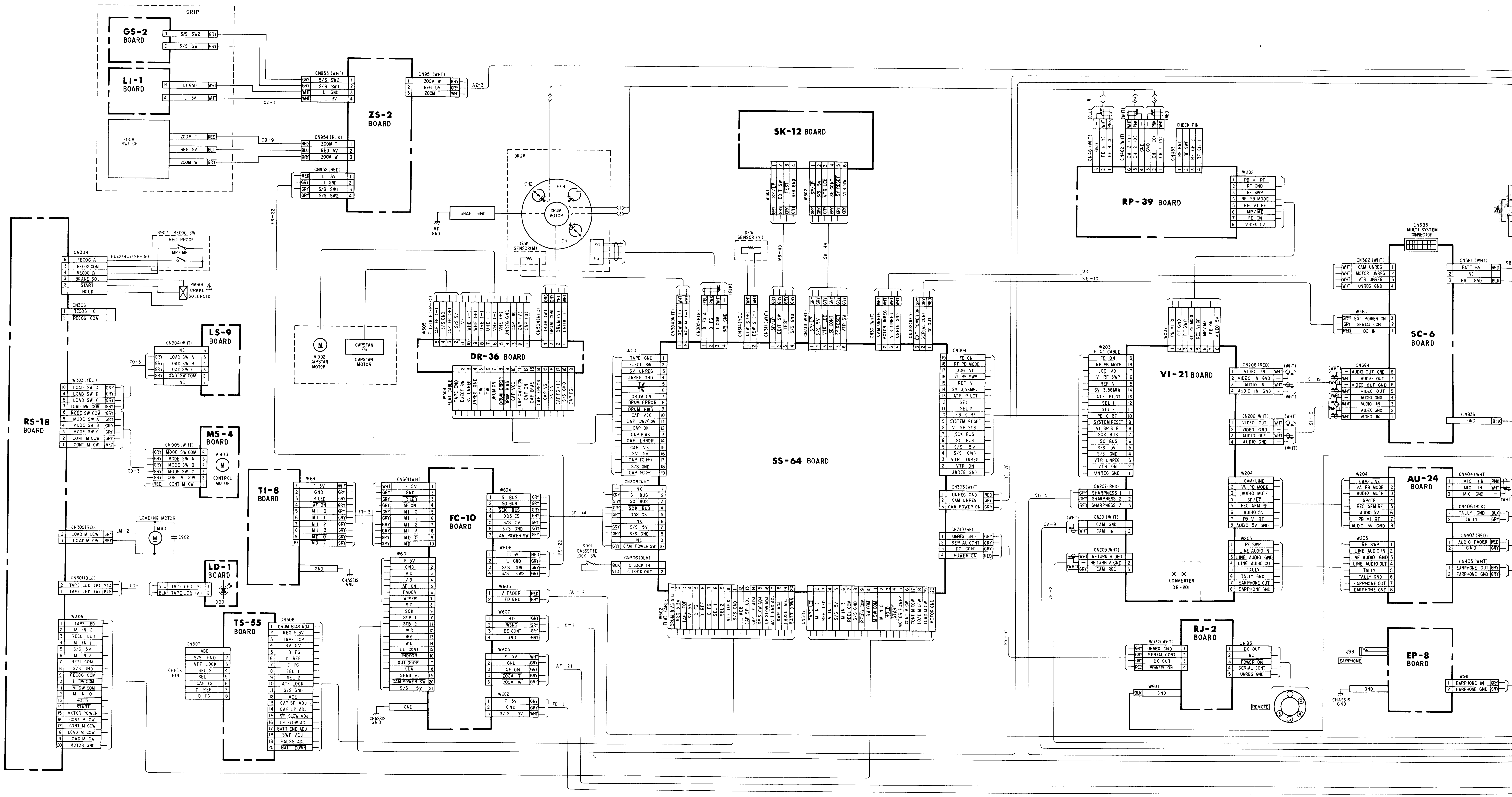

7 BOARD
Q701
VIDEO AMP
D701,702
RECT
RV 703
CONTRAST
L701
Q702
OVER CURRENT DETECT
Q703
OVER VOLTAGE DETECT & H OUT INHIBIT
Q704
H.OUT
H SIZE
T701 FBT
D701
DUMPER
RV704
FOCUS
RV 705
BRIGHT
04
LY
RV702
H FREQ
701
IRIS INDICATOR
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP
MIX
V SYNC SEP
V OSC
V OUT
VCC 1
VCC 2
RV 701
V SIZE
L702
G1
H1
HV
G3
G2
CRT
V901
CN703
DH 1
DH 2
L901 DY
H
V
CN702
DV 2
DV 1

SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17

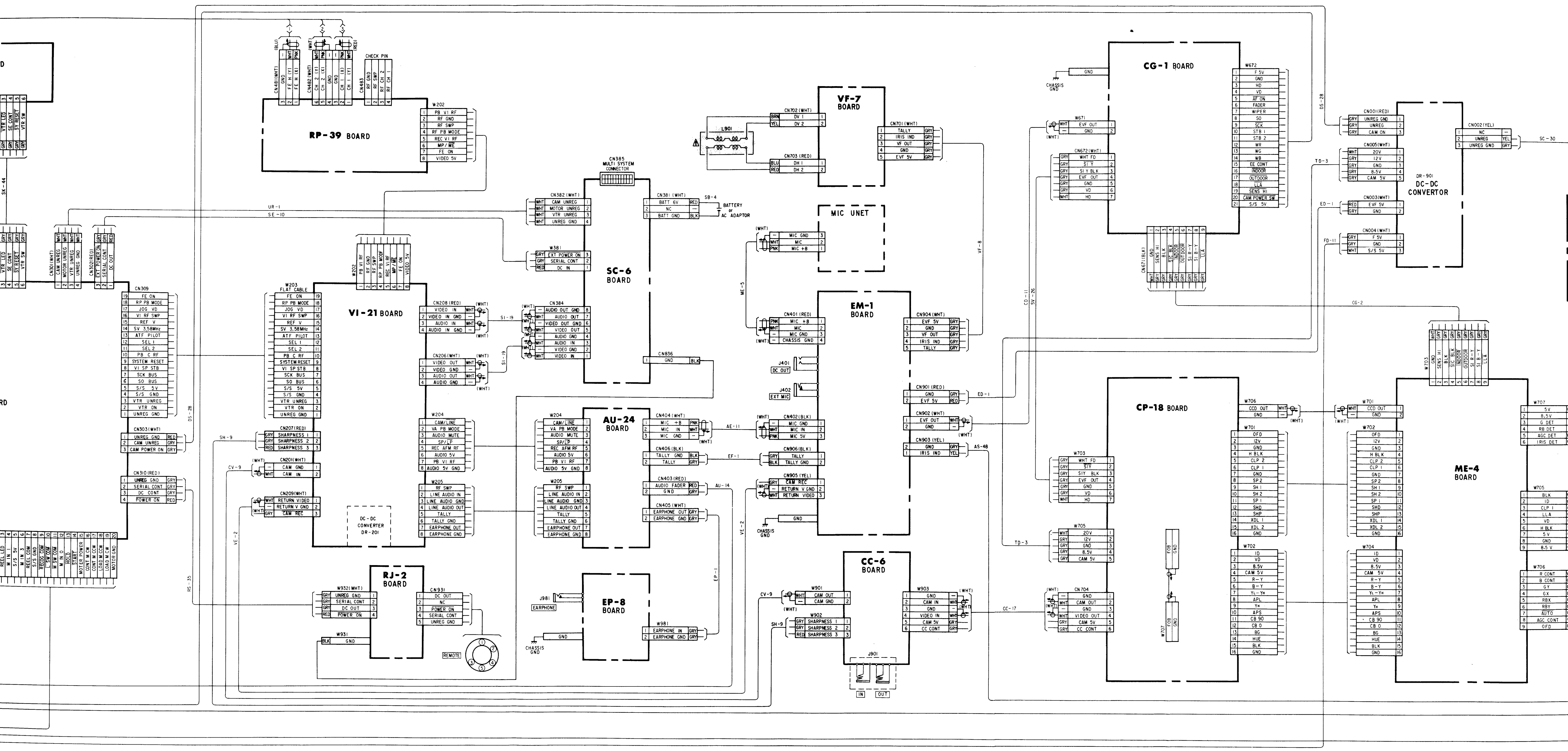
4-1. FRAME SCHEMATIC DIAGRAM


GRIP
GS-2 BOARD
LI-1 BOARD
ZOOM SWITCH
ZS-2 BOARD
DRUM
DRUM MOTOR
SK-12 BOARD
RP-39 BOARD
RS-18 BOARD
LS-9 BOARD
MS-4 BOARD
M903 CONTROL MOTOR
M902 CAPSTAN MOTOR
CAPSTAN FG
DR-36 BOARD
SS-64 BOARD
VI-21 BOARD
SC-6 BOARD
TI-8 BOARD
FC-10 BOARD
LD-1 BOARD
TS-55 BOARD
AU-24 BOARD
RJ-2 BOARD
EP-8 BOARD
LOADING MOTOR
M901
PM901 BRAKE SOLENOID
S902 RECOG SW REC PROOF
S901 CASSETTE LOCK SW
DEW SENSOR (M)
DEW SENSOR (S)
DC-DC CONVERTER DR-201
CN385 MULTI SYSTEM CONNECTOR
CHASSIS GND
REMOTE
EARPHONE

FRAME FRAME

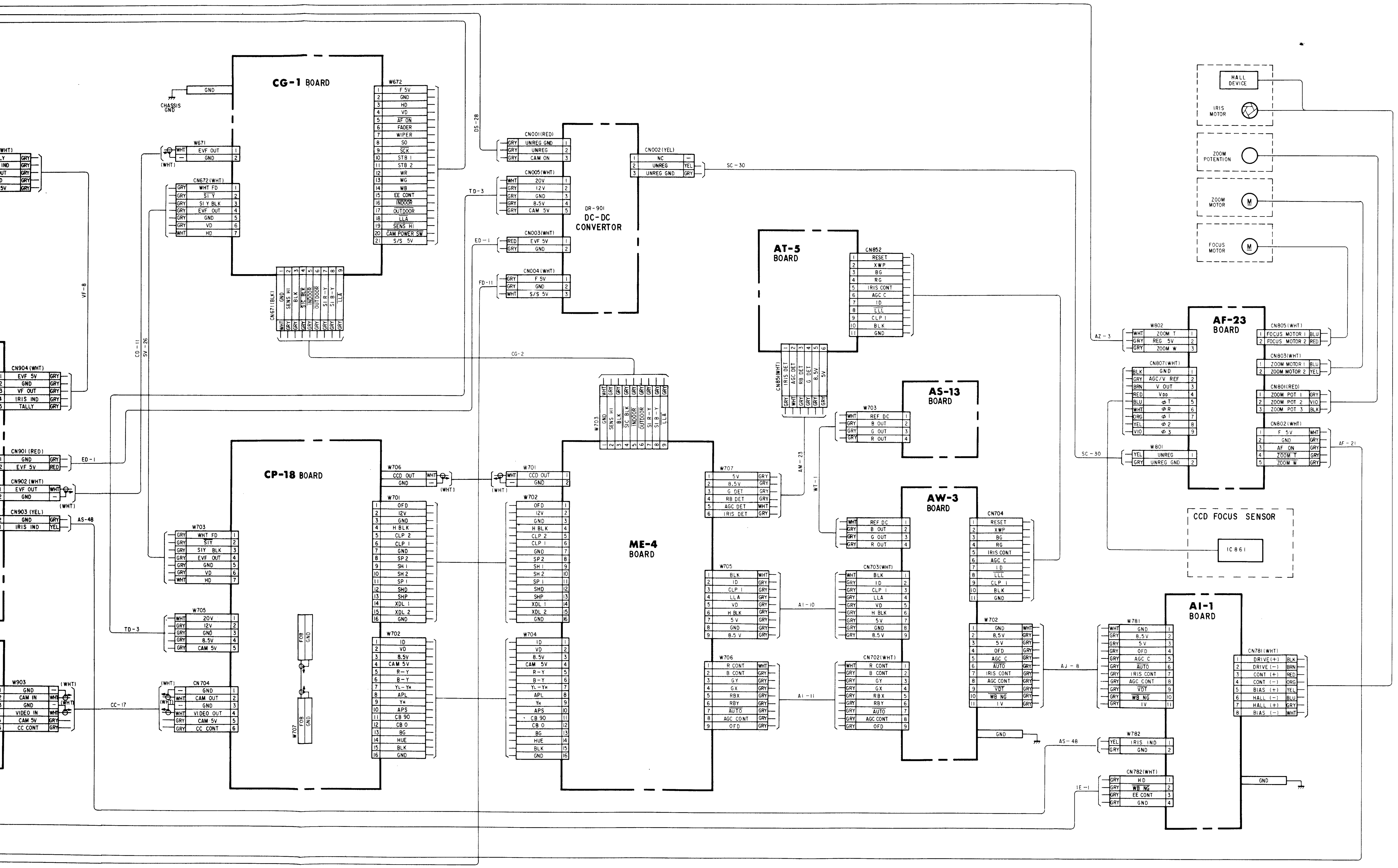
10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

Note: The comp
are critica
specified.


RP-39 BOARD
VI-21 BOARD
SC-6 BOARD
CN385 MULTI SYSTEM CONNECTOR
BATTERY or AC ADAPTOR
VF-7 BOARD
MIC UNET
EM-1 BOARD
AU-24 BOARD
EP-8 BOARD
RJ-2 BOARD
CC-6 BOARD
CG-1 BOARD
CP-18 BOARD
ME-4 BOARD
DR-901 DC-DC CONVERTOR
DC-DC CONVERTER DR-201
W203 FLAT CABLE
CHECK PIN
L901
J401 DC OUT
J402 EXT MIC
J981 EARPHONE
J901 IN OUT
REMOTE
CHASSIS GND
UR-1
SE-10
SB-4
SI-19
SH-9
CV-9
VE-2
RS-35
DS-28
SK-44
VF-8
ME-5
AE-11
EF-1
AU-14
EP-1
ED-1
AS-48
CC-17
TD-3
FD-11
CD-11
SV-26
CG-2
SC-30

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: **Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.**


CG-1 BOARD
CHASSIS GND
W671
CN672(WHT)
W672
CN671(BLK)
CN001(RED)
CN005(WHT)
CN003(WHT)
CN004(WHT)
CN002(YEL)
DR-901
DC-DC CONVERTOR
AT-5 BOARD
CN852
CN854(WHT)
AS-13 BOARD
W703
AW-3 BOARD
CN704
CN703(WHT)
CN702(WHT)
W702
AF-23 BOARD
W802
CN807(WHT)
W801
CN805(WHT)
CN803(WHT)
CN801(RED)
CN802(WHT)
HALL DEVICE
IRIS MOTOR
ZOOM POTENTION
ZOOM MOTOR
FOCUS MOTOR
CCD FOCUS SENSOR
IC861
AI-1 BOARD
W781
W782
CN782(WHT)
CN781(WHT)
CP-18 BOARD
W706
W701
W703
W705
CN704
W702
W707
ME-4 BOARD
W701
W702
W704
W707
W705
W706
CN904(WHT)
CN901(RED)
CN902(WHT)
CN903(YEL)
W903
DS-28
VF-8
TD-3
ED-1
FD-11
CD-11
SV-26
CG-2
SC-30
AZ-3
AM-23
WT-1
AI-10
AI-11
AJ-8
AS-48
IE-1
AF-21
CC-17
GND

Note on replacing CCD imager block

- With a pair of IC701 (CCD imager) on the CP-18 complete board and IC002 (Corrector ROM) on the DT-61 complete board, it is used as a repair part of the CCD imager block.
  Since corrector ROM IC is manufactured to match the CCD imager, replacement of a single unit of the CCD imager or corrector ROM cannot be made.
- Ther are cases in which a corrector ROM is not attached in the service set, since correction is unnecessary for some units.
- Depending on their characteristics, there are two kinds of CCD imager blocks to be supplied as service parts. The following applications should be selected in accordance with the conditions of the service set.
  1) When both a CCD imager and a corrector ROM are supplied simultaneously.
     Replace both the CCD imager and the corrector ROM. When a corrector ROM is not mounted on the service set, install a corrector ROM which is supplied anew.
  2) When only a CCD imager is supplied
     Correction is unnecessary for this CCD imager. Therefore, if a corrector ROM is being mounted on the service set, remove it from the set and replace only the CCD imager.
- The IC701 is not mounted on the already mounted CP-18 boad which has been supplied as a repair part and IC002 is not mounted on the already mounted DT-61 board for the same reason.
  When the respective boards are replaced, remove the respective ICs from the old boards and install them to the new ones respectively.
- After the CCD imager block has been replaced, perfrom the entire adjustments of the camera section.
- CCD imager is structurally capable being broken down by static electricity. For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into it.

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

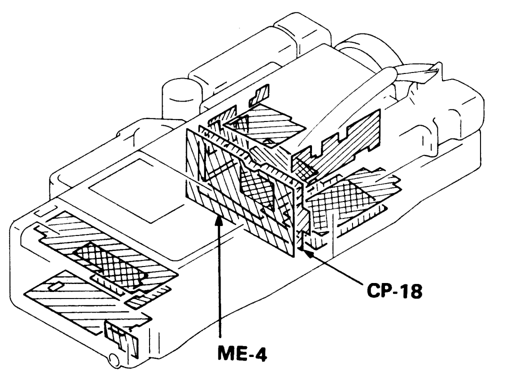
Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ░ : pattern of the rear side.
- ░ : B+ Pattern.
- Digital transistor (CP-18: Q711, 712) transistor with resistors. Refer to the CP-18 board schematic diagram for digital transistor

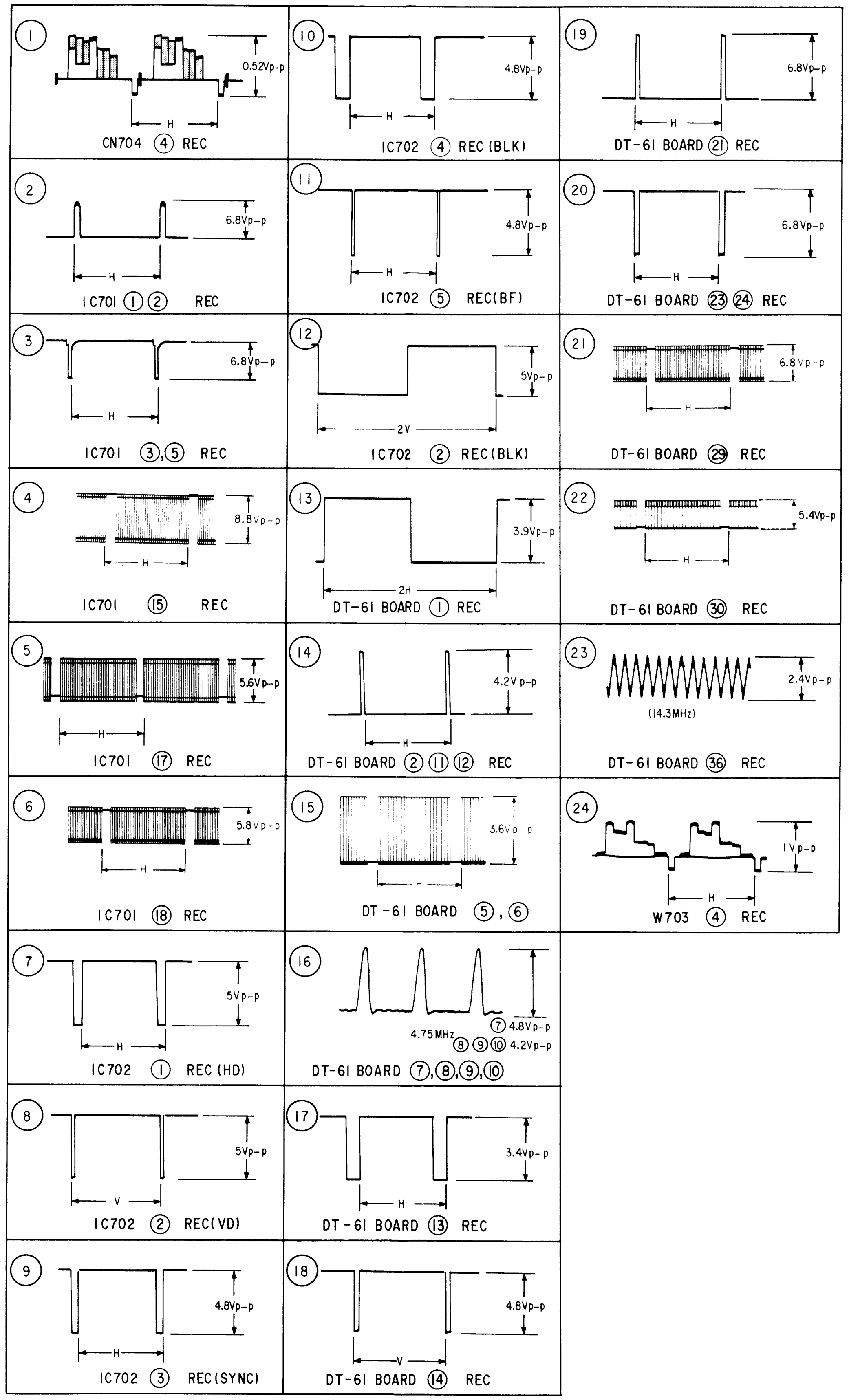
Note	
Soldering side:	Parts on the soldering side being seen from the soldering are stated.
Component side:	Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

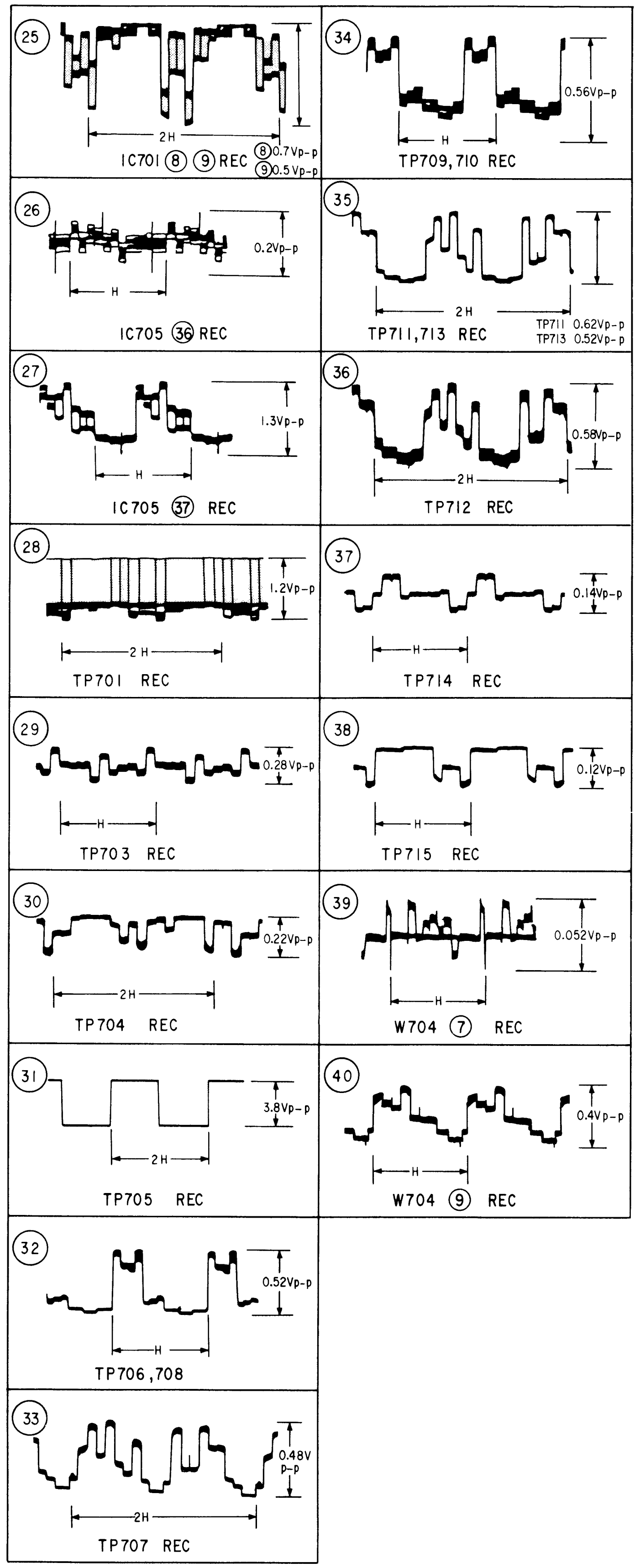
- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.



CP-18 BOARD (CAMERA)


① 0.52Vp-p H CN704 ④ REC
② 6.8Vp-p H IC701 ①② REC
③ 6.8Vp-p H IC701 ③,⑤ REC
④ 8.8Vp-p H IC701 ⑮ REC
⑤ 5.6Vp-p H IC701 ⑰ REC
⑥ 5.8Vp-p H IC701 ⑱ REC
⑦ 5Vp-p H IC702 ① REC (HD)
⑧ 5Vp-p V IC702 ② REC(VD)
⑨ 4.8Vp-p H IC702 ③ REC(SYNC)
⑩ 4.8Vp-p H IC702 ④ REC (BLK)
⑪ 4.8Vp-p H IC702 ⑤ REC(BF)
⑫ 5Vp-p 2V IC702 ② REC(BLK)
⑬ 3.9Vp-p 2H DT-61 BOARD ① REC
⑭ 4.2Vp-p H DT-61 BOARD ②⑪⑫ REC
⑮ 3.6Vp-p H DT-61 BOARD ⑤,⑥
⑯ 4.75MHz ⑦4.8Vp-p ⑧⑨⑩ 4.2Vp-p DT-61 BOARD ⑦,⑧,⑨,⑩
⑰ 3.4Vp-p H DT-61 BOARD ⑬ REC
⑱ 4.8Vp-p V DT-61 BOARD ⑭ REC
⑲ 6.8Vp-p H DT-61 BOARD ㉑ REC
⑳ 6.8Vp-p H DT-61 BOARD ㉓㉔ REC
㉑ 6.8Vp-p H DT-61 BOARD ㉙ REC
㉒ 5.4Vp-p H DT-61 BOARD ㉚ REC
㉓ 2.4Vp-p (14.3MHz) DT-61 BOARD ㊱ REC
㉔ 1Vp-p H W703 ④ REC

ME-4 BOARD (CAMERA)

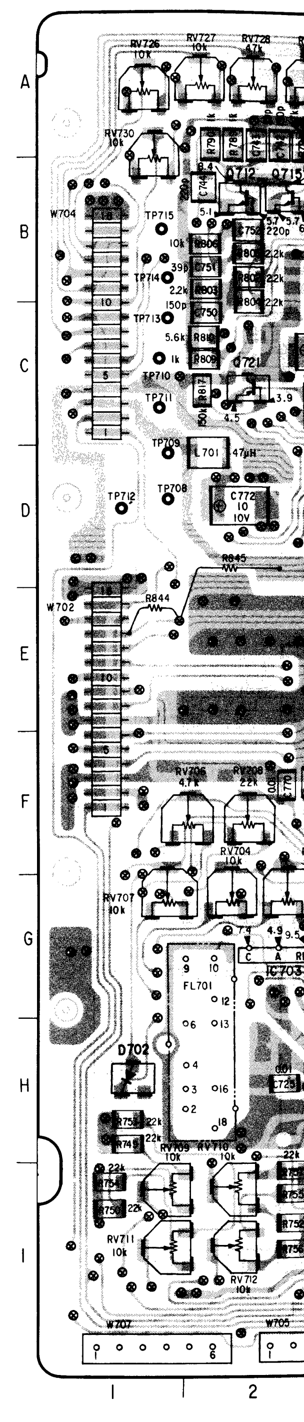

㉕ 2H IC701 ⑧ ⑨ REC ⑧0.7Vp-p ⑨0.5Vp-p
㉖ 0.2Vp-p H IC705 ㊱ REC
㉗ 1.3Vp-p H IC705 ㊲ REC
㉘ 1.2Vp-p 2H TP701 REC
㉙ 0.28Vp-p H TP703 REC
㉚ 0.22Vp-p 2H TP704 REC
㉛ 3.8Vp-p 2H TP705 REC
㉜ 0.52Vp-p H TP706,708
㉝ 0.48V p-p 2H TP707 REC
㉞ 0.56Vp-p H TP709,710 REC
㉟ 2H TP711,713 REC TP711 0.62Vp-p TP713 0.52Vp-p
㊱ 0.58Vp-p 2H TP712 REC
㊲ 0.14Vp-p H TP714 REC
㊳ 0.12Vp-p H TP715 REC
㊴ 0.052Vp-p H W704 ⑦ REC
㊵ 0.4Vp-p H W704 ⑨ REC

CP-18(CCD IMAGER, SYNC GENERATOR,

– Ref. No. CP-18 BOARD: 1000 series, ME-4 BOARD

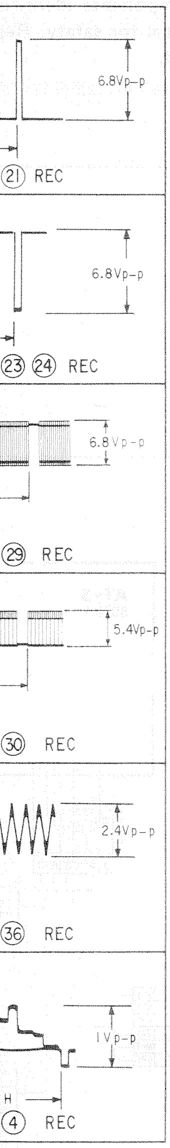
D701	F - 10
D702	H - 1
D703	H - 9
D704	F - 7
D705	B - 7
D706	E - 8
IC701	G - 3
IC702	I - 10
IC703	G - 2
IC704	C - 8
IC705	B - 4
Q701	G - 7
Q702	H - 7
Q703	H - 7
Q704	I - 8
Q705	I - 8
Q706	I - 8
Q707	F - 10
Q708	C - 7
Q709	C - 7
Q710	C - 7
Q711	B - 7
Q712	B - 2
Q713	B - 9
Q714	B - 10
Q715	B - 2
Q716	B - 10
Q717	C - 10
Q718	C - 10
Q719	C - 9
Q720	C - 10
Q721	C - 2
Q722	I - 4
Q723	I - 4
Q724	I - 4
Q725	I - 4
RV701	H - 5
RV702	G - 5
RV703	F - 5
RV704	G - 2
RV705	G - 2
RV706	F - 2
RV707	G - 1
RV708	F - 2
RV709	I - 1
RV710	I - 2
RV711	I - 1
RV712	I - 2
RV713	F - 4
RV714	E - 4
RV715	F - 4
RV716	E - 4
RV717	E - 4
RV718	F - 3
RV719	E - 3
RV720	E - 3
RV721	E - 4
RV723	D - 4
RV726	A - 1
RV727	A - 2
RV728	A - 2
RV729	A - 2
RV730	A - 1
RV731	A - 3
TP701	H - 3
TP703	H - 3
TP704	I - 3
TP705	H - 3
TP706	F - 5
TP707	F - 3
TP708	D - 2
TP709	D - 2
TP710	C - 2
TP711	C - 2
TP712	D - 1
TP713	C - 2
TP714	B - 2
TP715	B - 2

ME-4 BOARD (COMPONENT SI

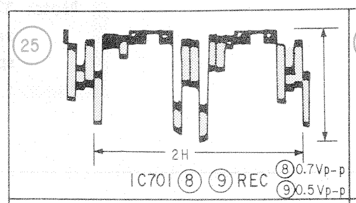

A
B
C
D
E
F
G
H
I
1
2
RV726
RV727
RV728
RV730
W704
TP715
TP714
TP713
TP711
TP709
TP710
TP712
TP708
L701
C772
R844
R845
W702
RV706
RV704
RV707
FL701
D702
RV709
RV710
RV711
RV712
W707
W705

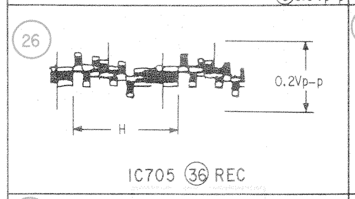
CP-18(CCD IMAGER, SYNC GENERATOR, ENCODER), ME-4 (CAMERA SIGNAL PROCESS, MATRIX) PRINTED WIRING BOARD

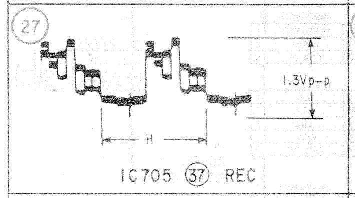
– Ref. No. CP-18 BOARD: 1000 series, ME-4 BOARD: 2000 series –

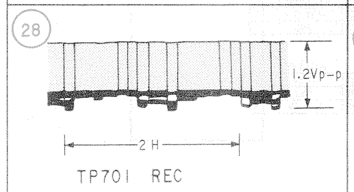


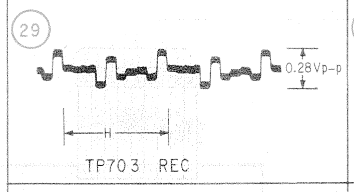
ME-4 BOARD (CAMERA)

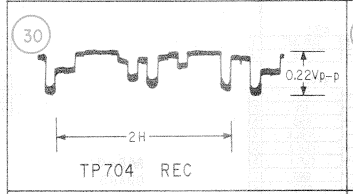

㉕ IC701 ⑧ ⑨ REC

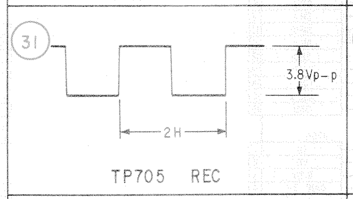

㉖ IC705 ㊱ REC

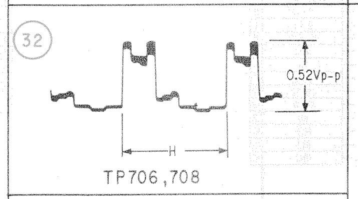

㉗ IC705 ㊲ REC

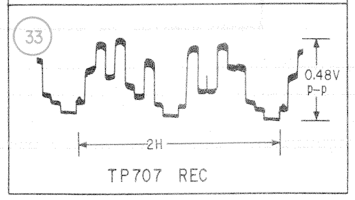

㉘ TP701 REC

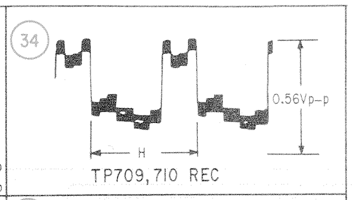

㉙ TP703 REC

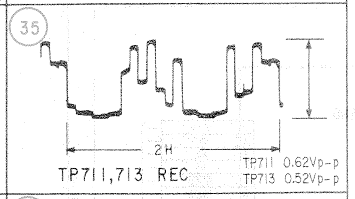

㉚ TP704 REC

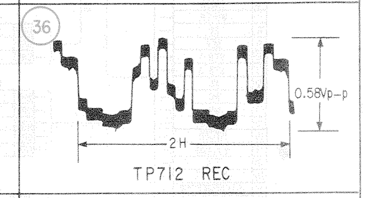

㉛ TP705 REC

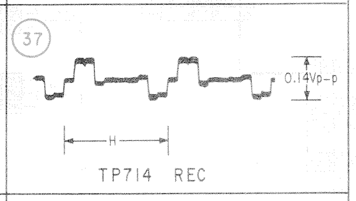

㉜ TP706,708

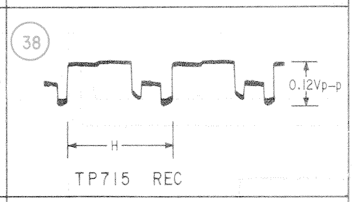

㉝ TP707 REC

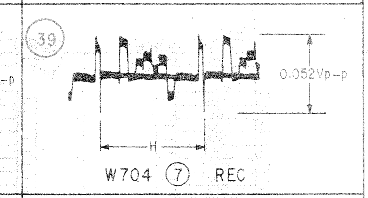

㉞ TP709,710 REC

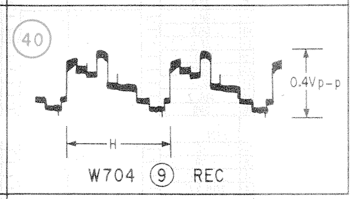

㉟ TP711,713 REC


㊱ TP712 REC


㊲ TP714 REC

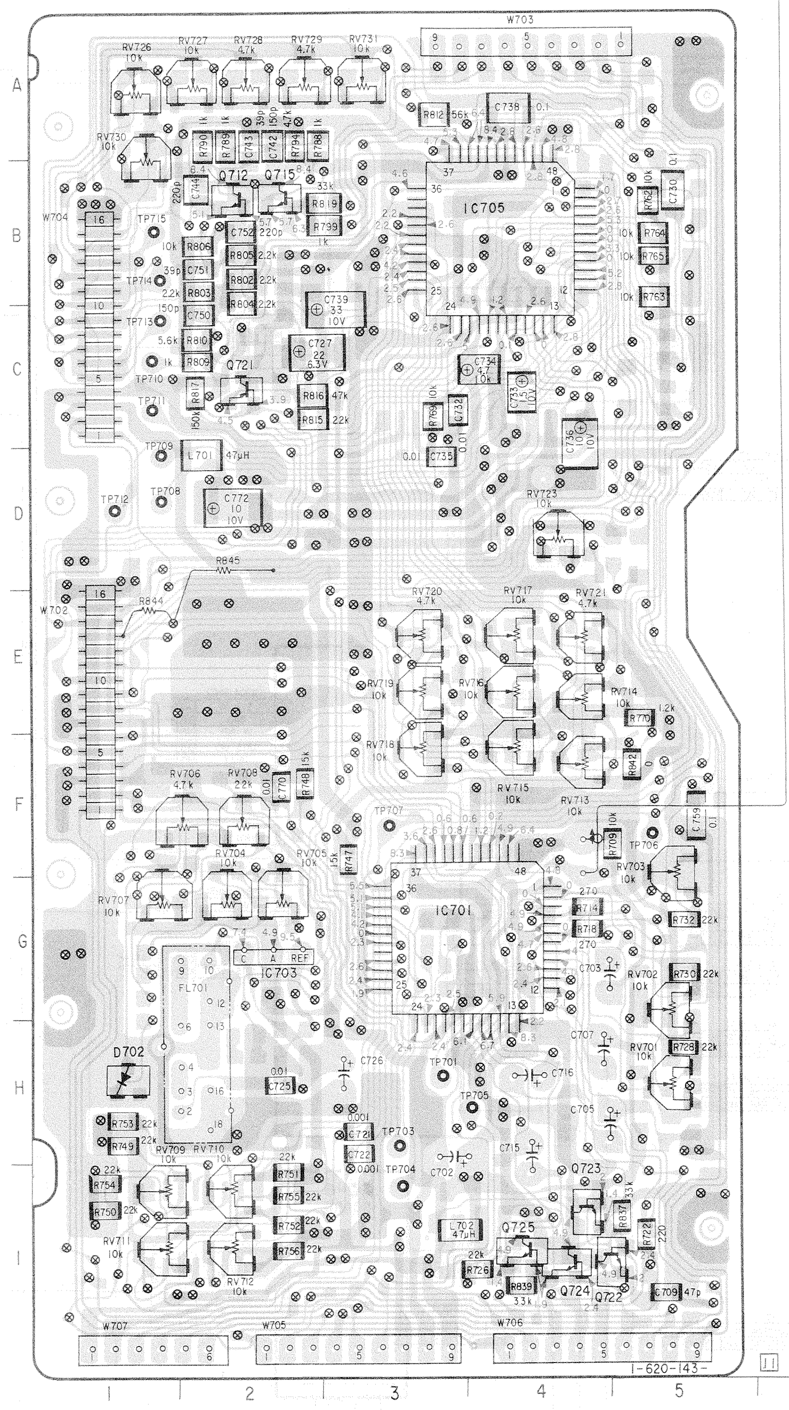

㊳ TP715 REC


㊴ W704 ⑦ REC

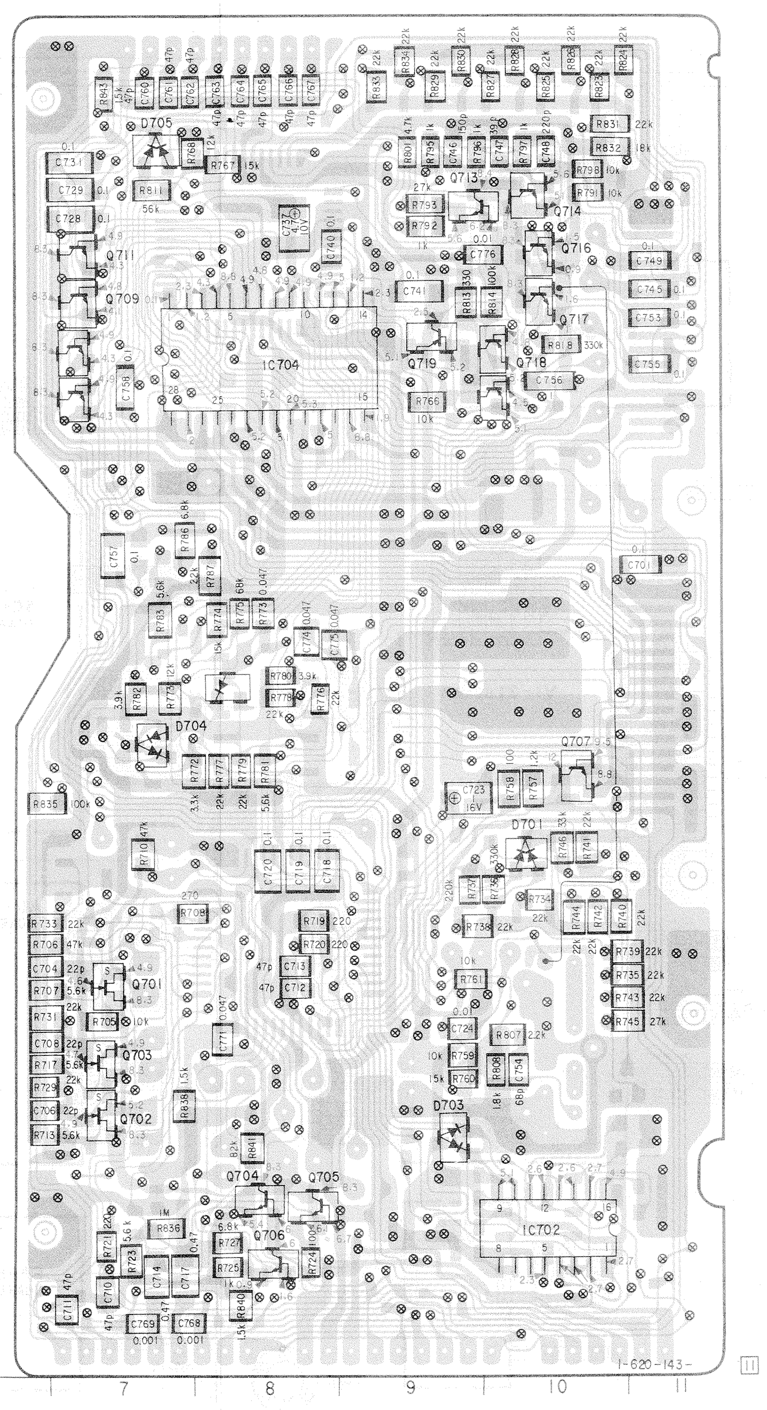

㊵ W704 ⑨ REC

ME-4 BOARD (COMPONENT SIDE) no mark: CAMERA POWER SW ON mode

D701	F-10
D702	H-1
D703	H-9
D704	F-7
D705	B-7
D706	E-8
IC701	G-3
IC702	I-10
IC703	G-2
IC704	C-8
IC705	B-4
Q701	G-7
Q702	H-7
Q703	H-7
Q704	I-8
Q705	I-8
Q706	I-8
Q707	F-10
Q708	C-7
Q709	C-7
Q710	C-7
Q711	B-7
Q712	B-2
Q713	B-9
Q714	B-10
Q715	B-2
Q716	B-10
Q717	C-10
Q718	C-10
Q719	C-9
Q720	C-10
Q721	C-2
Q722	I-4
Q723	I-4
Q724	I-4
Q725	I-4
RV701	H-5
RV702	G-5
RV703	F-5
RV704	G-2
RV705	G-2
RV706	F-2
RV707	G-1
RV708	F-2
RV709	I-1
RV710	I-2
RV711	I-1
RV712	I-2
RV713	F-4
RV714	E-4
RV715	F-4
RV716	E-4
RV717	E-4
RV718	F-3
RV719	E-3
RV720	E-3
RV721	E-4
RV723	D-4
RV726	A-1
RV727	A-2
RV728	A-2
RV729	A-2
RV730	A-1
RV731	A-3
TP701	H-3
TP703	H-3
TP704	I-3
TP705	H-3
TP706	F-5
TP707	F-3
TP708	D-2
TP709	D-2
TP710	C-2
TP711	C-2
TP712	D-1
TP713	C-2
TP714	B-2
TP715	B-2

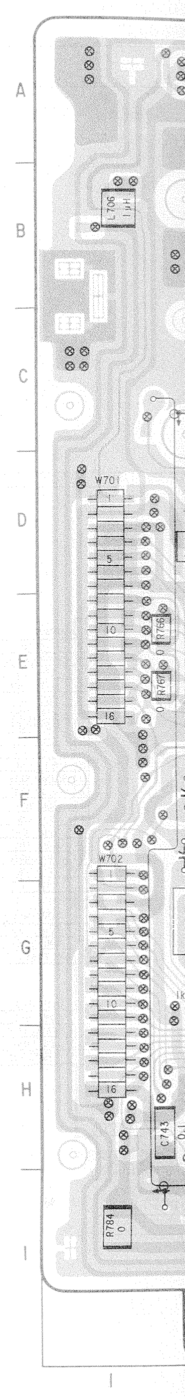

A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
W703
W704
W702
W707
W705
W706
IC705
IC701
IC703
FL701
D702
1-620-143-
11

ME-4 BOARD (SOLDER SIDE) no mark: CAMERA POWER SW ON mode


7
8
9
10
11
IC704
IC702
D705
D704
D701
D703
Q701
Q702
Q703
Q704
Q705
Q706
Q707
Q709
Q711
Q713
Q714
Q716
Q717
Q718
Q719
1-620-143-
11

CP-18 BOARD

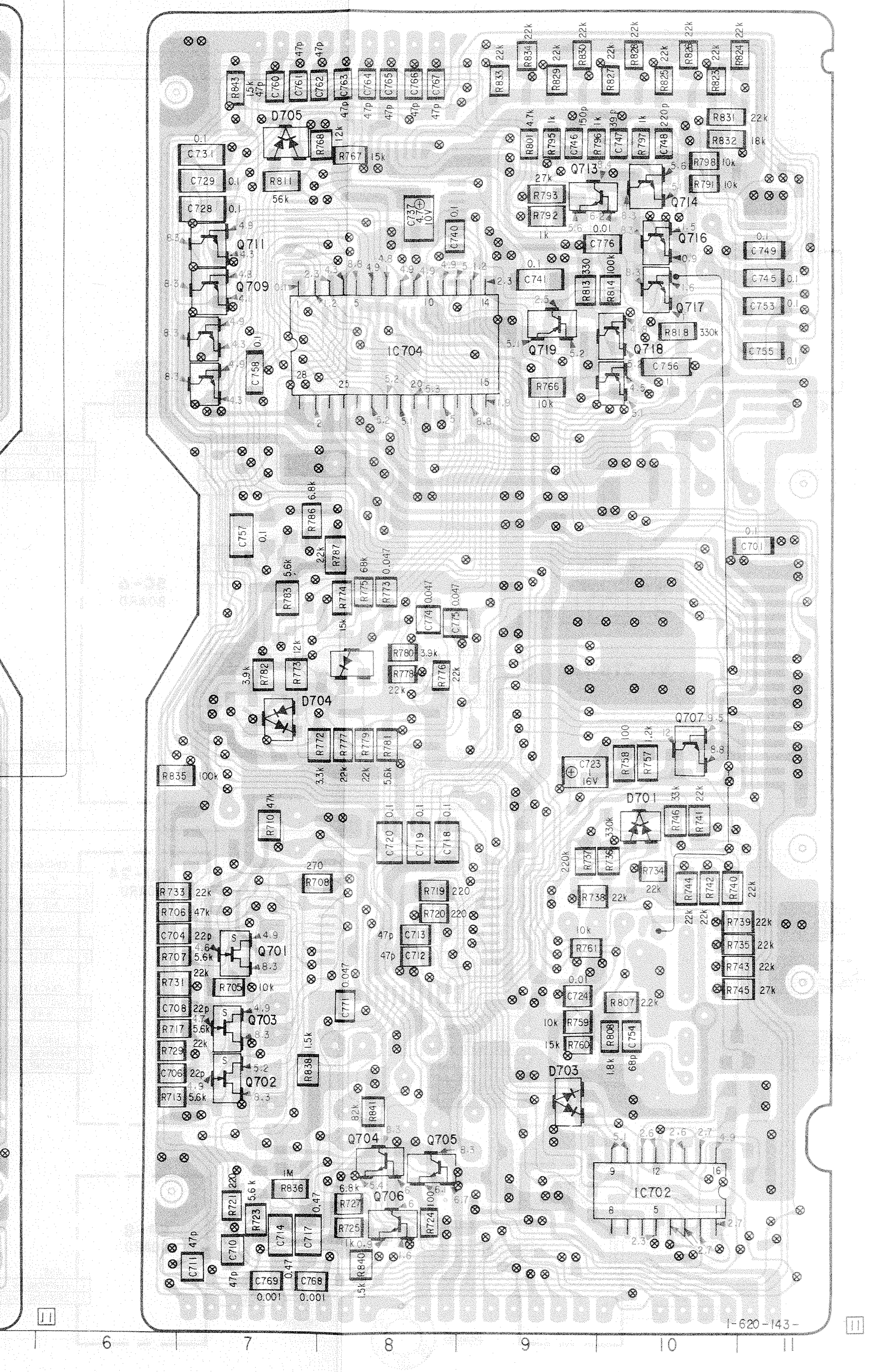
D701	C-7
D703	I-8
D704	G-5
D708	H-9
D709	G-8
IC701	B-1
IC702	D-9
IC703	H-2
Q701	B-8
Q702	A-4
Q703	A-5
Q704	E-5
Q705	F-7
Q708	G-8
Q709	G-5
Q710	H-8
Q711	I-4
Q712	I-7
RV701	F-5
RV702	G-5
RV703	G-5


A
B
C
D
E
F
G
H
I
W701
W702

L PROCESS, MATRIX) PRINTED WIRING BOARD

Be sure to always read "Note on replacing the CCD imager block" in page 111 when replacing the CP-18 complete board, DT-61 complete board, and CCD imager block (IC701 on the CP-18 board and IC002 on the DT-61 board).

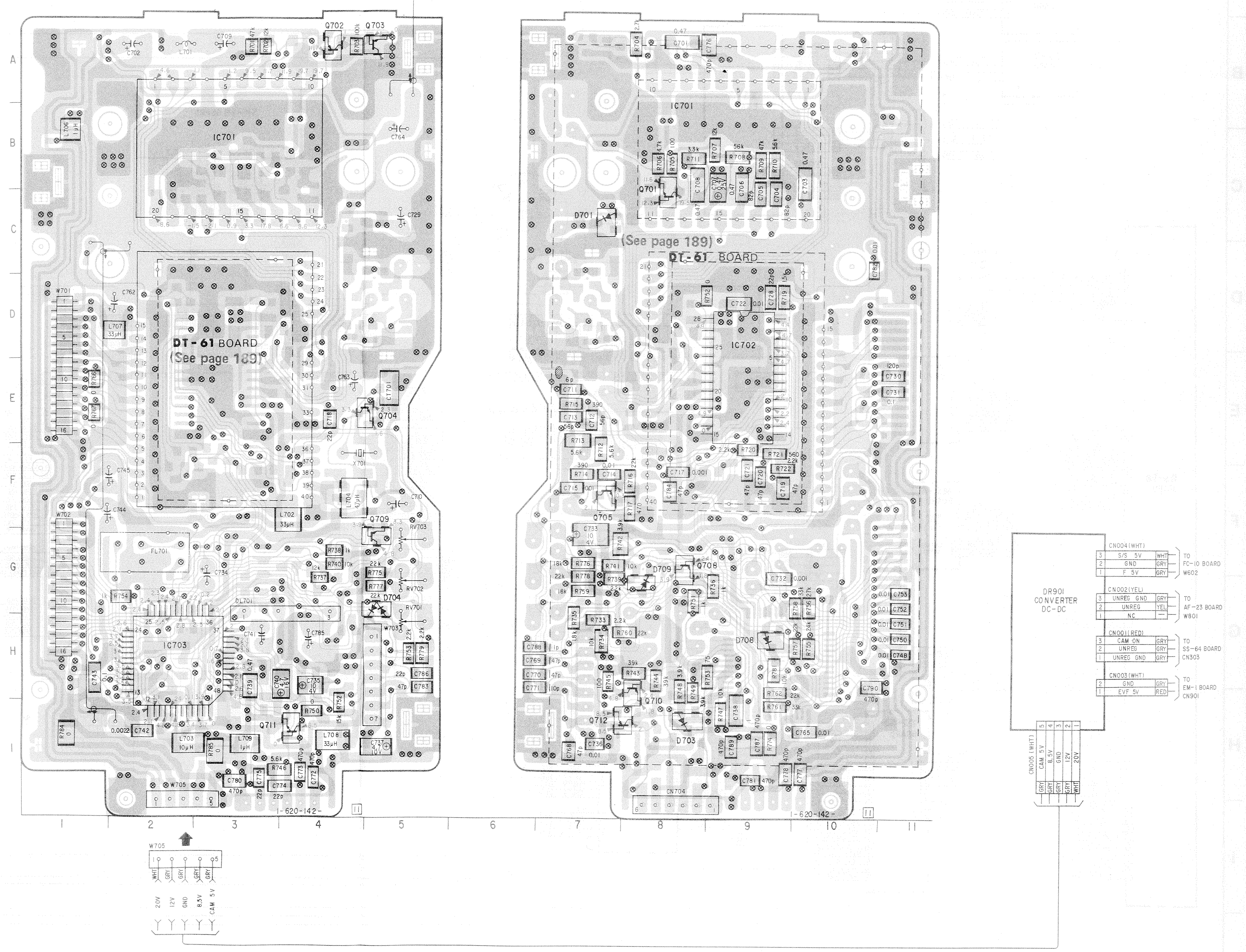
ME-4 BOARD (SOLDER SIDE) no mark: CAMERA POWER SW ON mode


IC704
IC702
Q701
Q702
Q703
Q704
Q705
Q706
Q707
Q709
Q711
Q713
Q714
Q716
Q717
Q718
Q719
D701
D703
D704
D705
1-620-143-
6
7
8
9
10
11

D701	C-7
D703	I-8
D704	G-5
D708	H-9
D709	G-8
IC701	B-1
IC702	D-9
IC703	H-2
Q701	B-8
Q702	A-4
Q703	A-5
Q704	E-5
Q705	F-7
Q708	G-8
Q709	G-5
Q710	H-8
Q711	I-4
Q712	I-7
RV701	F-5
RV702	G-5
RV703	G-5

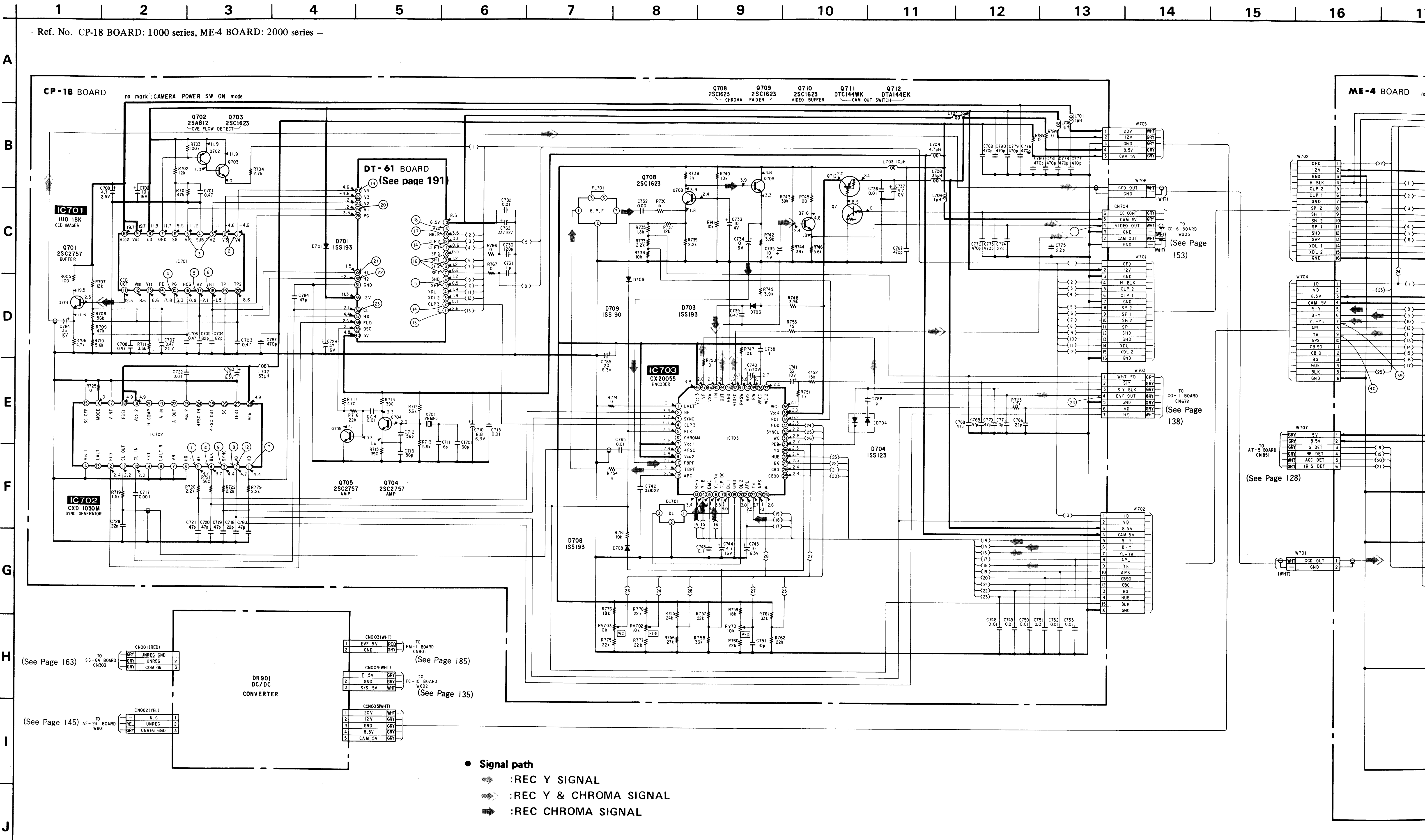
CP-18 BOARD (COMPONENT SIDE) no mark: CAMERA POWER SW ON mode

CP-18 BOARD (SOLDER SIDE) no mark: CAMERA POWER SW ON mode


A
B
C
D
E
F
G
H
I
IC701
IC702
IC703
DT-61 BOARD
(See page 189)
DT-61 BOARD
(See page 189)
Q701
Q702
Q703
Q704
Q705
Q708
Q709
Q710
Q711
Q712
D701
D703
D704
D708
D709
RV701
RV702
RV703
FL701
DL701
X701
W701
W702
W703
W705
CN704
1-620-142-
1
2
3
4
5
6
7
8
9
10
11
DR901
CONVERTER
DC-DC
CN004 (WHT)
3 S/S 5V WHT
2 GND GRY
1 F 5V GRY
TO FC-10 BOARD W602
CN002 (YEL)
3 UNREG GND GRY
2 UNREG YEL
1 NC —
TO AF-23 BOARD W801
CN001 (RED)
3 CAM ON GRY
2 UNREG GRY
1 UNREG GND GRY
TO SS-64 BOARD CN303
CN003 (WHT)
2 GND GRY
1 EVF 5V RED
TO EM-1 BOARD CN901
CN005 (WHT)
5 CAM 5V GRY
4 8.5V GRY
3 GND GRY
2 12V GRY
1 20V WHT
W705
1 5
WHT GRY GRY GRY GRY
20V 12V GND 8.5V CAM 5V

CP-18(CCD IMAGER, SYNC GENERATOR, ENCODER), ME-4 (CAMERA SIGNAL PROCESS, MATRIX) SCHEMATIC DIAGRAM

– Ref. No. CP-18 BOARD: 1000 series, ME-4 BOARD: 2000 series –

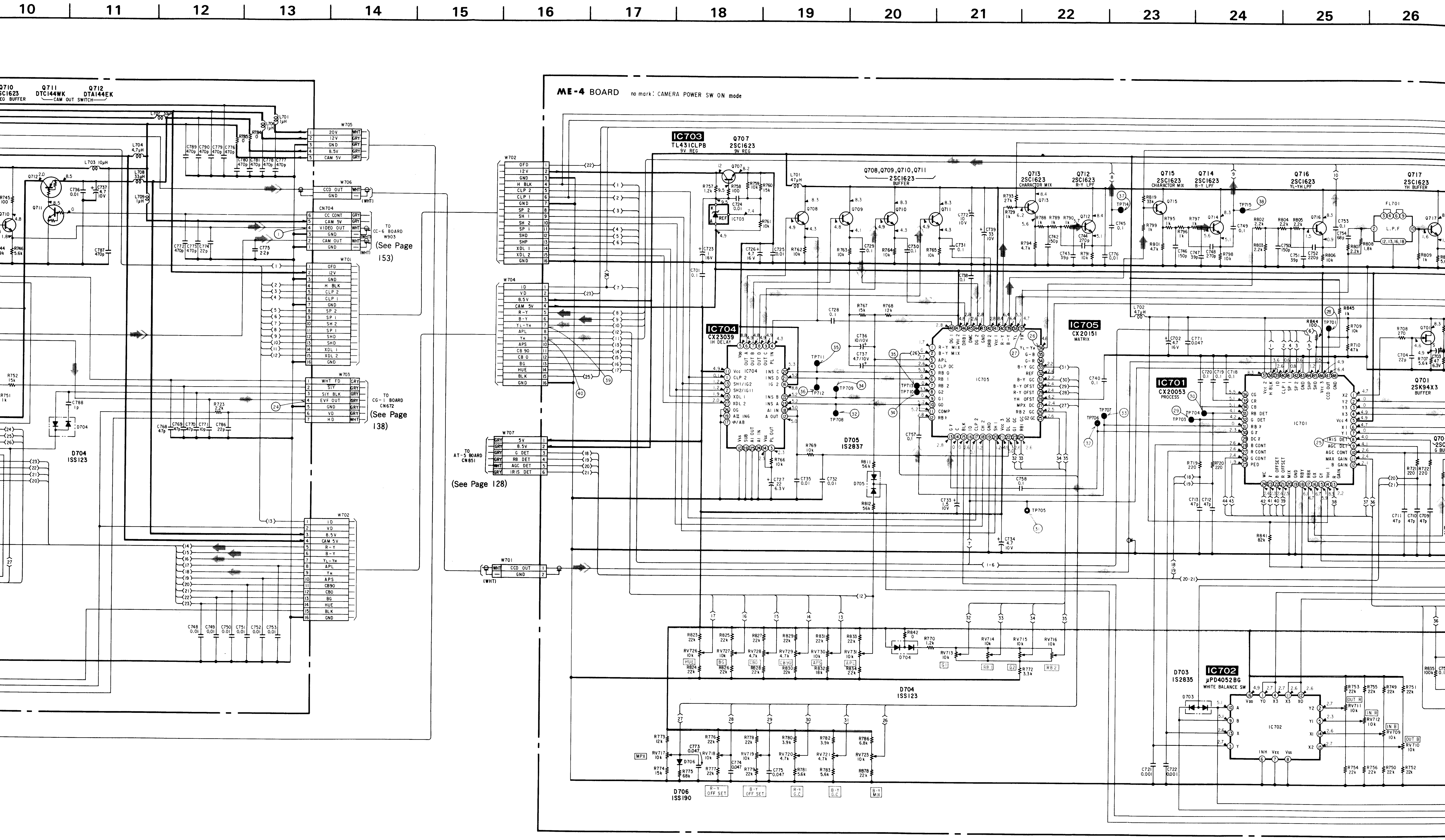

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
CP-18 BOARD
no mark : CAMERA POWER SW ON mode
Q702 2SA812
Q703 2SC1623
OVE FLOW DETECT
IC701 1U0 18K CCD IMAGER
Q701 2SC2757 BUFFER
IC702 CXD 1030M SYNC GENERATOR
DT-61 BOARD (See page 191)
D701 1SS193
Q705 2SC2757 AMP
Q704 2SC2757 AMP
X701 28MHz
Q708 2SC1623 CHROMA
Q709 2SC1623 FADER
Q710 2SC1623 VIDEO BUFFER
Q711 DTC144WK
Q712 DTA144EK
CAM OUT SWITCH
FL701 B.P.F
D709 1SS190
D703 1SS193
IC703 CX20055 ENCODER
DL701 DL
D708 1SS193
D704 1SS123
W705
W706
CN704
TO CC-6 BOARD W903 (See Page 153)
W701
W703
TO CG-1 BOARD CN672 (See Page 138)
W702
RV703 WC
RV702 FDS
RV701 PED
DR901 DC/DC CONVERTER
CN001(RED)
TO SS-64 BOARD CN303 (See Page 163)
CN002(YEL)
TO AF-23 BOARD W801 (See Page 145)
CN003(WHT)
TO EM-1 BOARD CN901 (See Page 185)
CN004(WHT)
TO FC-10 BOARD W602 (See Page 135)
CN005(WHT)
ME-4 BOARD
W702
W704
W707
TO AT-3 BOARD CN851 (See Page 128)
W701

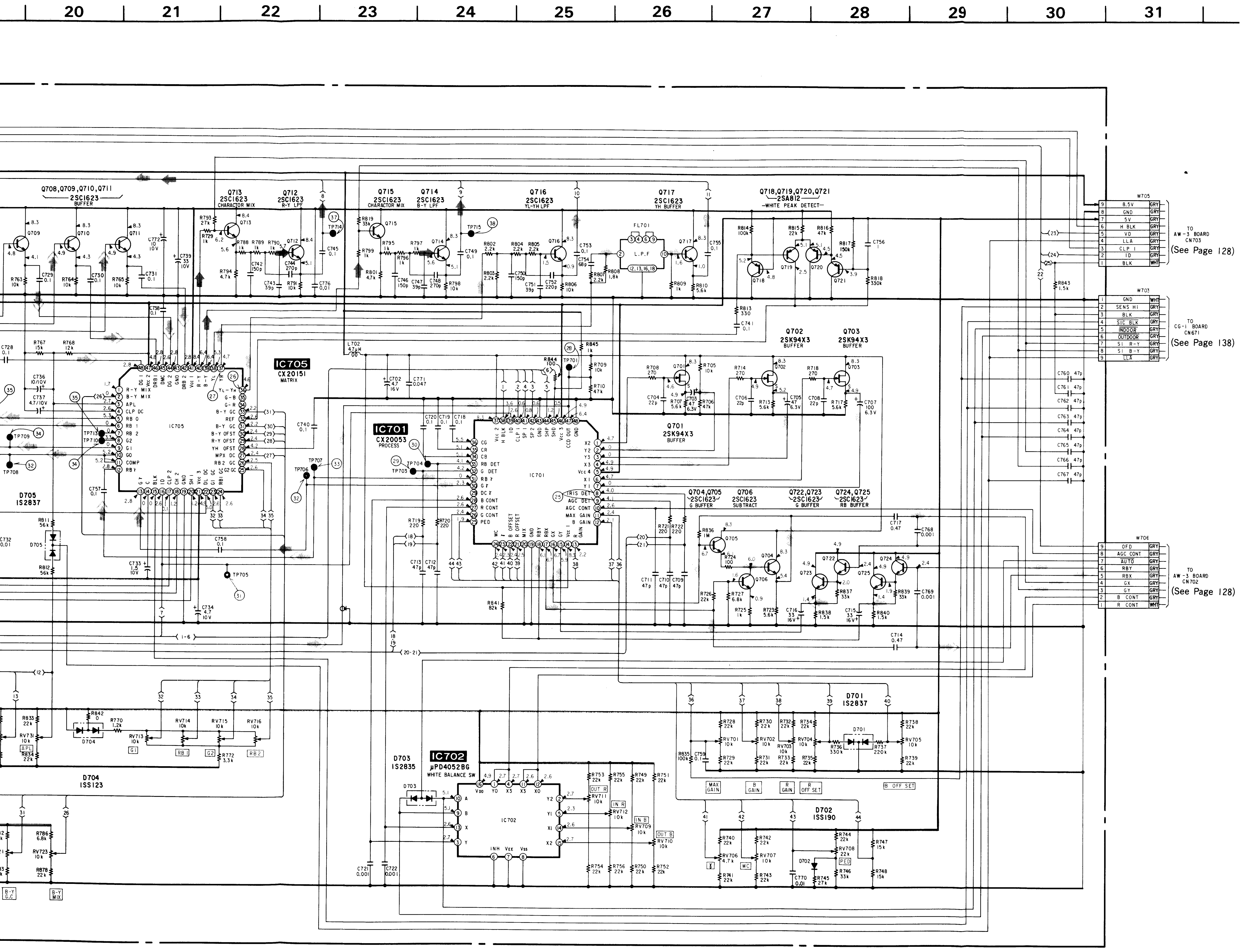
● **Signal path**

:REC Y SIGNAL

:REC Y & CHROMA SIGNAL

:REC CHROMA SIGNAL


10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
Q710 2SC1623
Q711 DTC144WK
Q712 DTA144EK
CAM OUT SWITCH
W705
20V
12V
GND
8.5V
CAM 5V
W706
CCD OUT
GND
(WHT)
CN704
CC CONT
CAM 5V
VIDEO OUT
GND
CAM OUT
GND
TO CC-6 BOARD W903
(See Page 153)
W701
OFD
12V
GND
H BLK
CLP 2
CLP 1
SP 2
SP 1
SH 2
SP 1
SHD
SHP
XDL 1
XDL 2
W703
WHT FD
SIY
SIY BLK
EVF OUT
VD
HD
TO CG-1 BOARD CN672
(See Page 138)
D704 1SS123
W702
ID
VD
8.5V
CAM 5V
R-Y
B-Y
YL-YH
APL
YH
APS
CB90
CB0
BG
HUE
BLK
GND
W704
W707
5V
8.5V
G DET
RB DET
AGC DET
IRIS DET
TO AT-5 BOARD CN851
(See Page 128)
ME-4 BOARD
no mark: CAMERA POWER SW ON mode
IC703 TL431CLPB 9V REG
Q707 2SC1623 9V REG
Q708,Q709,Q710,Q711 2SC1623 BUFFER
Q713 2SC1623 CHARACTOR MIX
Q712 2SC1623 R-Y LPF
Q715 2SC1623 CHARACTOR MIX
Q714 2SC1623 B-Y LPF
Q716 2SC1623 YL-YH LPF
Q717 2SC1623 YH BUFFER
FL701 L.P.F
IC704 CX23039 1H DELAY
IC705 CX20151 MATRIX
IC701 CX20053 PROCESS
Q701 2SK94X3 BUFFER
D705 1SS123
D704 1SS123
D703 1S2835
IC702 µPD4052BG WHITE BALANCE SW
D706 1SS190
HUE
BG
CB0
CB90
APS
APL
RB
G2
RB2
G1
MPX
R-Y OFF SET
B-Y OFF SET
R-Y G.C
B-Y G.C
B-Y MIX
OUT R
IN R
IN B
OUT B

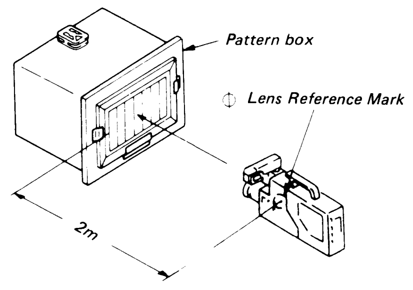

20
21
22
23
24
25
26
27
28
29
30
31
Q708,Q709,Q710,Q711 2SC1623 BUFFER
Q713 2SC1623 CHARACTOR MIX
Q712 2SC1623 R-Y LPF
Q715 2SC1623 CHARACTOR MIX
Q714 2SC1623 B-Y LPF
Q716 2SC1623 YL-YH LPF
Q717 2SC1623 YH BUFFER
Q718,Q719,Q720,Q721 2SA812 WHITE PEAK DETECT
FL701 L.P.F
IC705 CX20151 MATRIX
IC701 CX20053 PROCESS
Q702 2SK94X3 BUFFER
Q703 2SK94X3 BUFFER
Q701 2SK94X3 BUFFER
Q704,Q705 2SC1623 G BUFFER
Q706 2SC1623 SUBTRACT
Q722,Q723 2SC1623 G BUFFER
Q724,Q725 2SC1623 RB BUFFER
D705 1S2837
D704 1SS123
D703 1S2835
IC702 μPD4052BG WHITE BALANCE SW
D701 1S2837
D702 1SS190
W705
8.5V
GND
5V
H BLK
VD
LLA
CLP I
ID
BLK
TO AW-3 BOARD CN703
(See Page 128)
W703
GND
SENS HI
BLK
SIC BLK
INDOOR
OUTDOOR
SI R-Y
SI B-Y
LLA
TO CG-1 BOARD CN671
(See Page 138)
W706
OFD
AGC CONT
AUTO
RBY
RBX
GX
GY
B CONT
R CONT
TO AW-3 BOARD CN702
(See Page 128)
MAX GAIN
B GAIN
R GAIN
R OFF SET
B OFF SET
APL
RB
G
B-Y G.C
B-Y MIX

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- Measuring conditions of voltage value and waveform
  (1) The subject is color bar of pattern box.
  (2) The voltage value is a reference value between the grounding.
  (The tester used is the digital multimeter DC10MΩ)

When indicating parts by reference number, please include the board name.

1. Connection


Pattern box
Lens Reference Mark
2m

2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

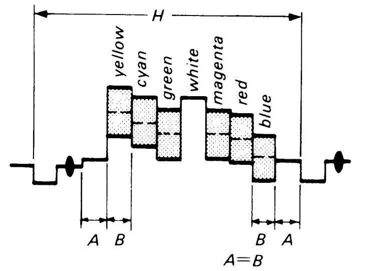

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A=B

Fig. a Camera output waveform of TP202 (Pin 3 of CN201) on VI-21 board

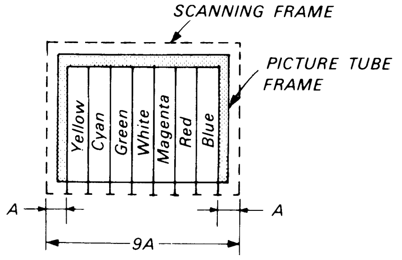

SCANNING FRAME
PICTURE TUBE FRAME
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
A
9A

Fig. b Picture of TV monitor screen

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (AW-3: Q701, AI-1: Q790, AT-5: Q852, 854) transistor with resistors.
  Refer to the AW-3, AI-1, AT-5 boards schematic diagram for digital transistor.

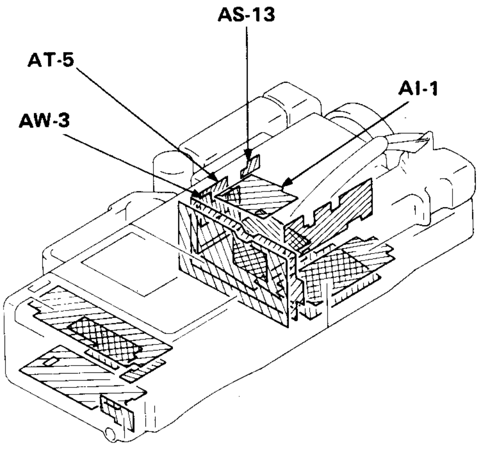
Note

Soldering side:	**Parts on the soldering side being seen from the soldering are stated.**
Component side:	**Parts on the component side being seen from the component are stated.**

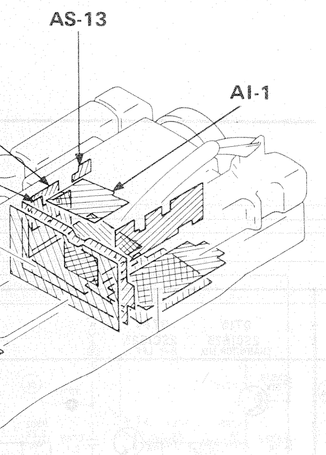
Regarding color indication of patterns

* **Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).**

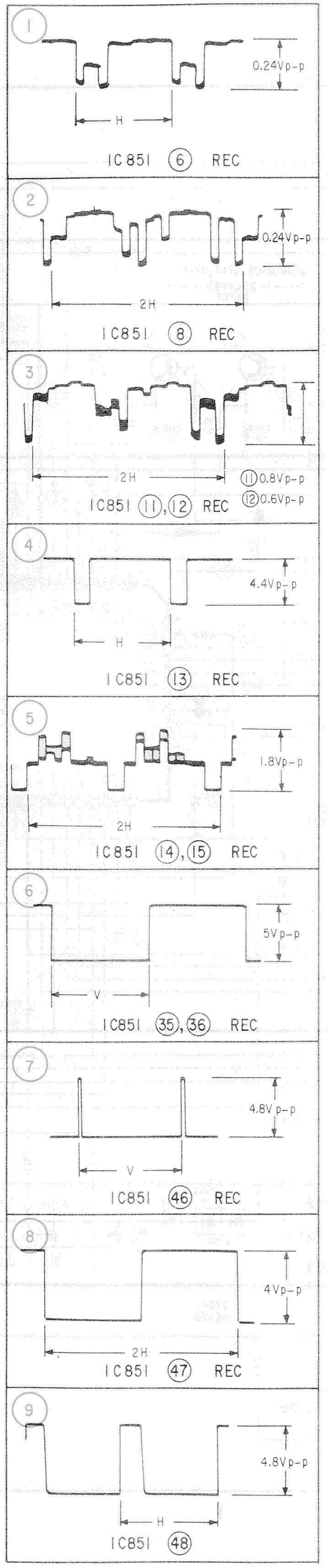
* **Pattern being seen in the state of the rear surface side is indicated in green pattern.**



AT
1
2
3
4
5
6
7
8
9



AT-5 BOARD (CAMERA)

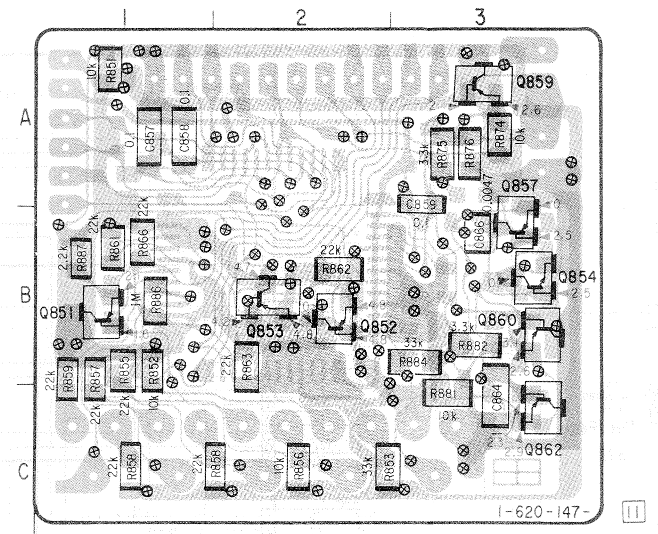


AW-3 (AUTO WHITE BALANCE), AT-5 (WHITE BALANCE, IRIS, AGC DETECTION), AS-13 (WHITE BALANCE SENSOR), AI-1 (AGC, IRIS CONTROL) PRINTED WIRING BOARD

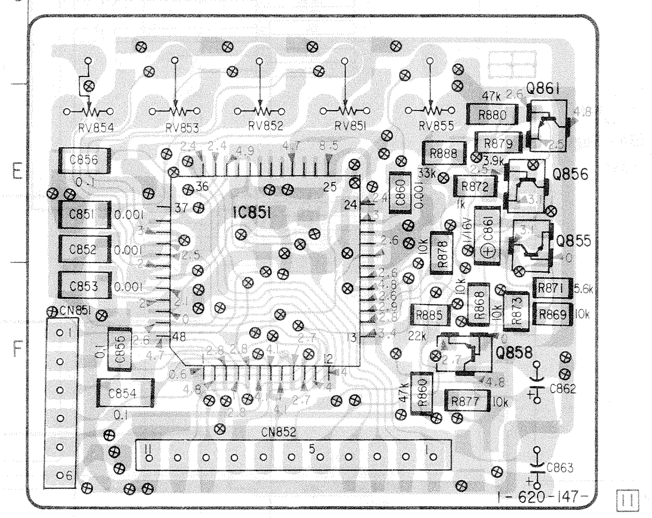
– Ref. No. AW-3, AT-5 BOARD: 3000 series, AI-1 BOARD: 4000 series, AS-13 BOARD: 5000 series –

IC851	E - 2
Q851	B - 1
Q852	B - 2
Q853	B - 2
Q854	B - 3
Q855	E - 3
Q856	E - 3
Q857	B - 3
Q858	F - 3
Q859	A - 3
Q860	B - 3
Q861	E - 3
Q862	B - 3
RV851	E - 2
RV852	E - 2
RV853	E - 1
RV854	E - 1
RV855	E - 3

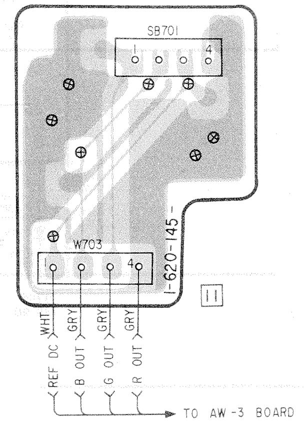
AT-5 BOARD (COMPONENT SIDS) no mark : CAMERA POWER SW ON mode


1
2
3
A
B
C
Q851
Q852
Q853
Q854
Q857
Q859
Q860
Q862
1-620-147-
11

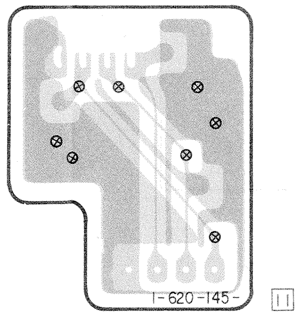
D **AT-5** BOARD (SOLDEL SIDE) no mark : CAMERA POWER SW ON mode


E
F
RV854
RV853
RV852
RV851
RV855
IC851
Q855
Q856
Q858
Q861
CN851
CN852
1-620-147-
11

AS-13 BOARD (COMPONENT SIDE)

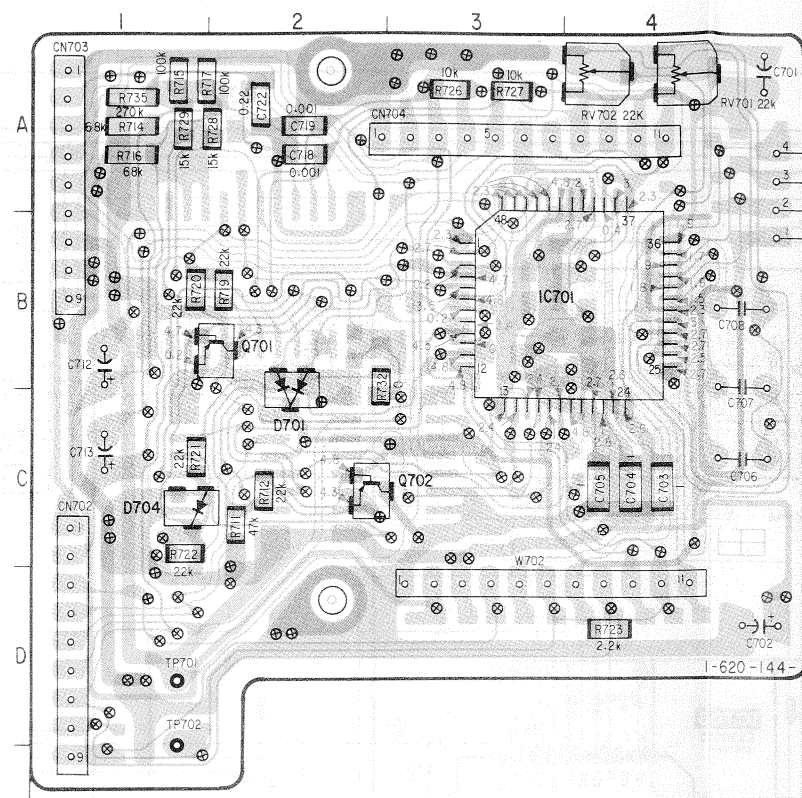

SB701
W703
1-620-145
11
WHT REF DC
GRY B OUT
GRY G OUT
GRY R OUT
TO AW-3 BOARD

AS-13 BOARD (SOLDER SIDE)

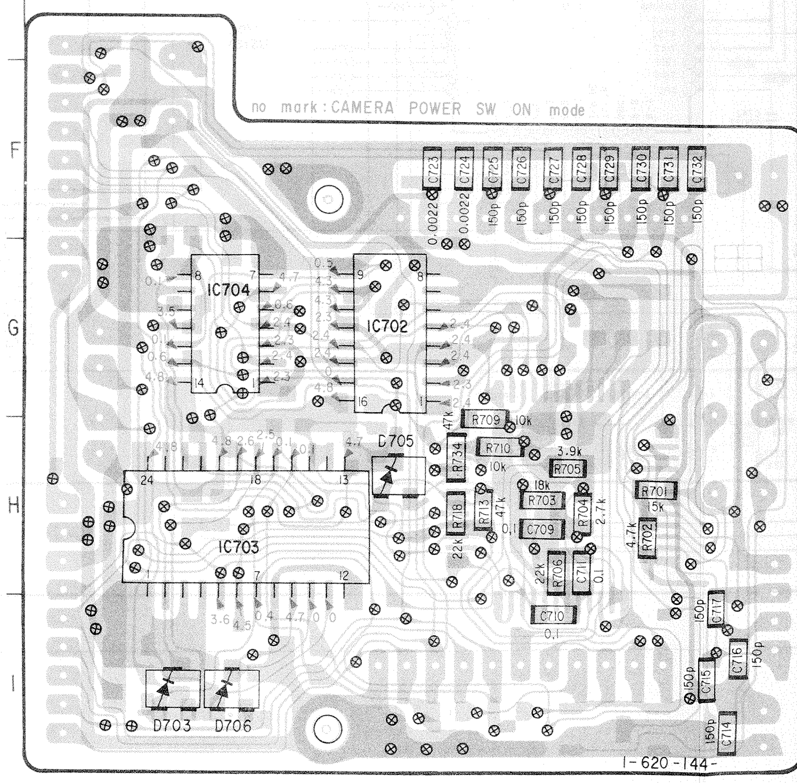


D701	B - 2
D703	I - 1
D704	C - 1
D705	H - 3
D706	I - 2
IC701	B - 3
IC702	G - 3
IC703	H - 2
IC704	G - 2
Q701	B - 1
Q702	C - 2
RV701	A - 4
RV702	A - 4
TP701	D - 1
TP702	D - 1

AW-3 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode


1
2
3
4
A
B
C
D
CN703
CN702
CN704
IC701
Q701
Q702
D701
D704
RV701 22k
RV702 22K
TP701
TP702
W702
1-620-144-

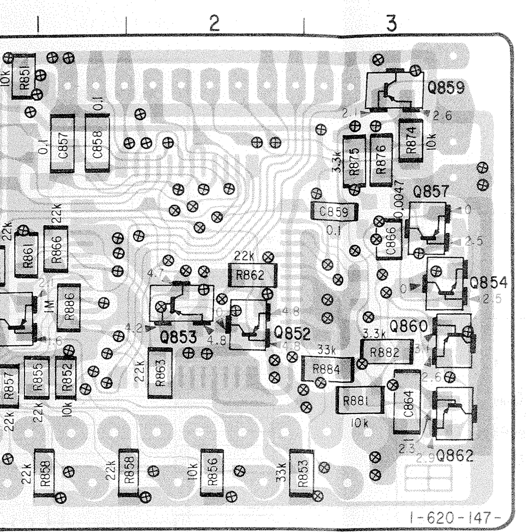
E **AW-3** BOARD (SOLDER SIDE)


no mark : CAMERA POWER SW ON mode
F
G
H
I
IC704
IC702
IC703
D705
D703
D706
1-620-144-

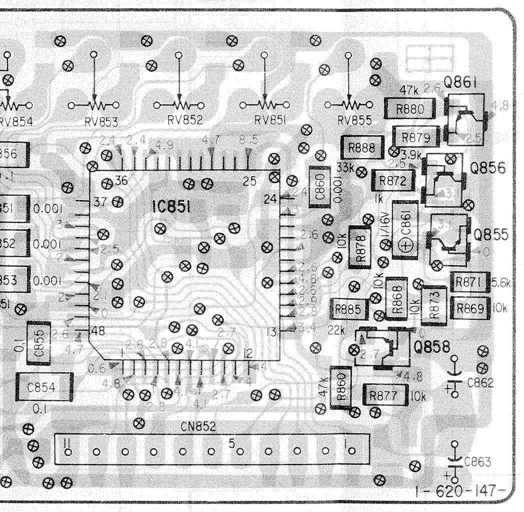
LANCE), AT-5 (WHITE BALANCE, IRIS, AGC DETECTION), AS-13 (WHITE BALANCE SENSOR), AI-1 (AGC, IRIS CONTROL) PRINTED WIRING BOARD

D: 3000 series, AI-1 BOARD: 4000 series, AS-13 BOARD: 5000 series –

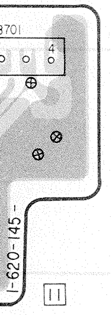
5 BOARD(COMPONENT SIDS) no mark : CAMERA POWER SW ON mode


1-620-147-
Q859
Q857
Q854
Q853
Q852
Q860
Q862

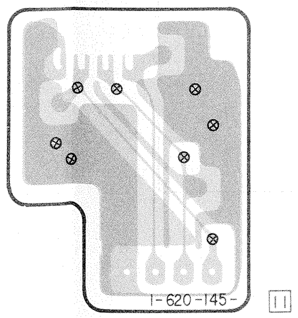
-5 BOARD(SOLDEL SIDE) no mark : CAMERA POWER SW ON mode


IC851
CN852
Q861
Q856
Q855
Q858
1-620-147-

D(COMPONENT SIDE)



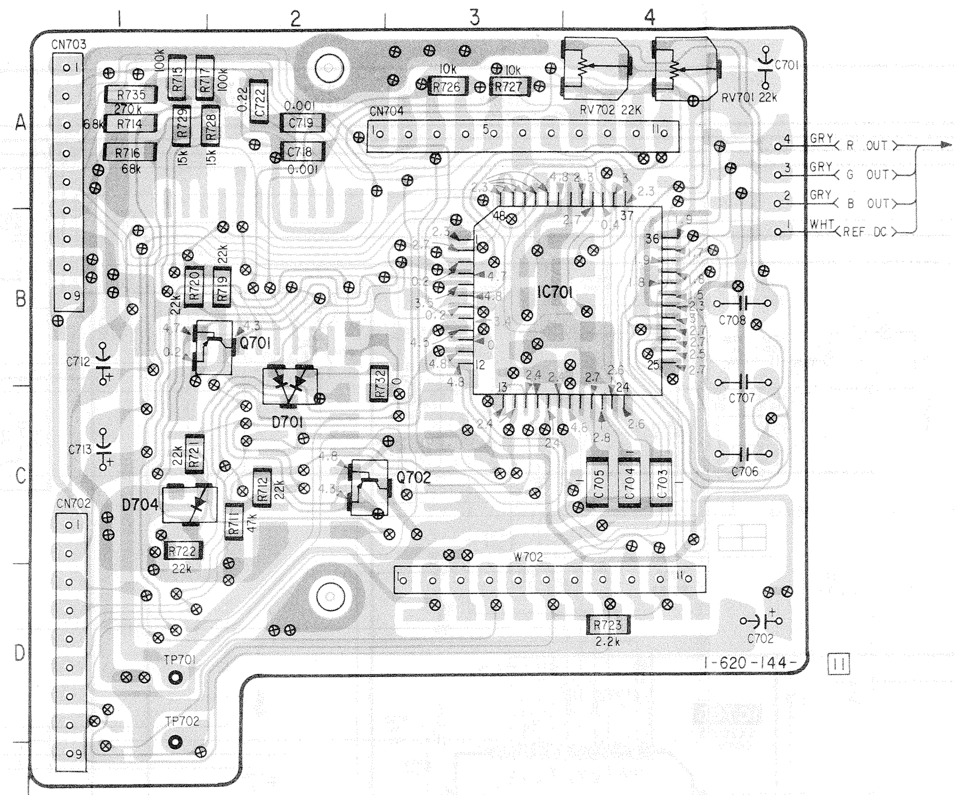
AS-13 BOARD(SOLDER SIDE)



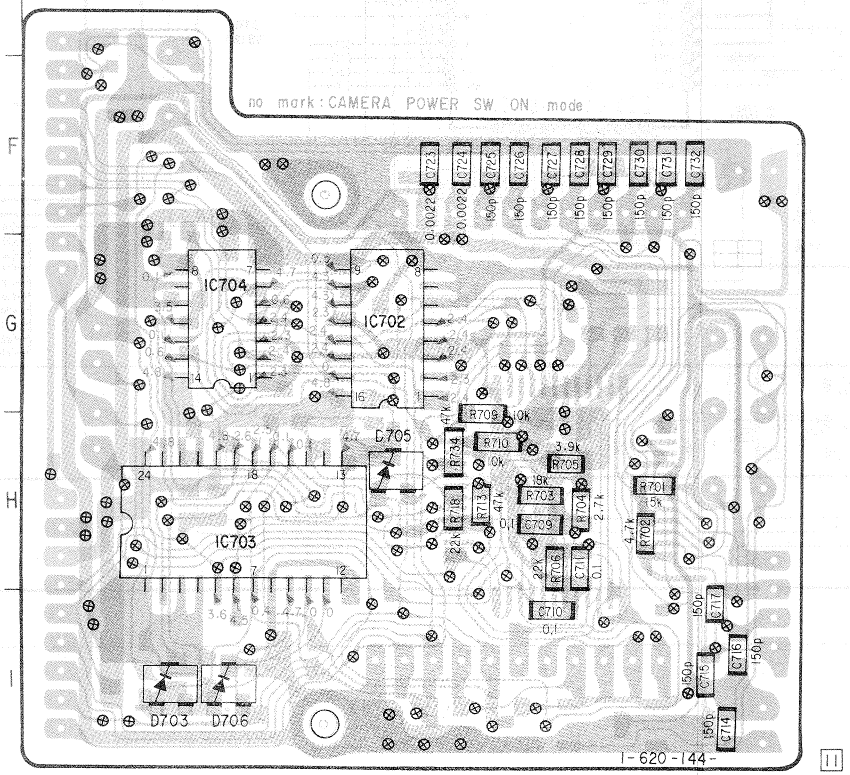
TO AW-3 BOARD

AW-3 BOARD(COMPONENT SIDE) no mark: CAMERA POWER SW ON mode

D701	B-2
D703	I-1
D704	C-1
D705	H-3
D706	I-2
IC701	B-3
IC702	G-3
IC703	H-2
IC704	G-2
Q701	B-1
Q702	C-2
RV701	A-4
RV702	A-4
TP701	D-1
TP702	D-1

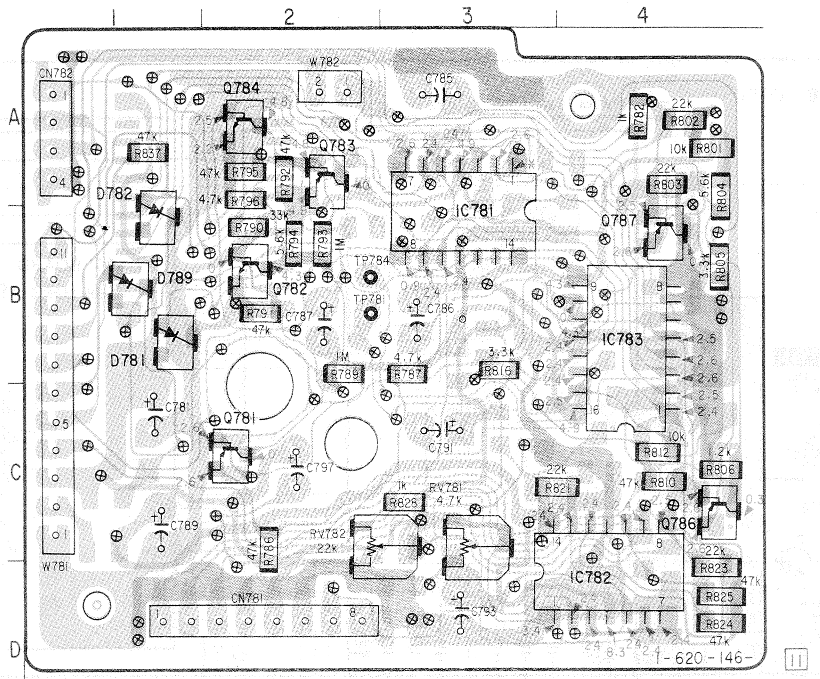

IC701
Q701
Q702
D701
D704
CN703
CN702
CN704
W702
RV702 22K
RV701 22k
GRY R OUT
GRY G OUT
GRY B OUT
WHT REF DC
TO AS-13 BOARD B703
1-620-144-

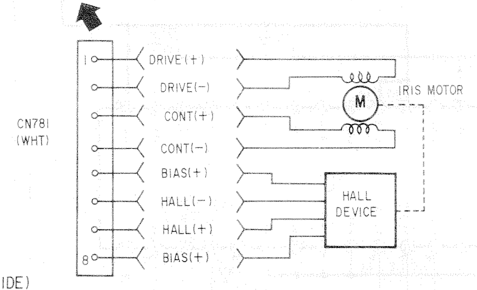
AW-3 BOARD(SOLDER SIDE)


no mark: CAMERA POWER SW ON mode
IC704
IC702
IC703
D705
D703
D706
1-620-144-

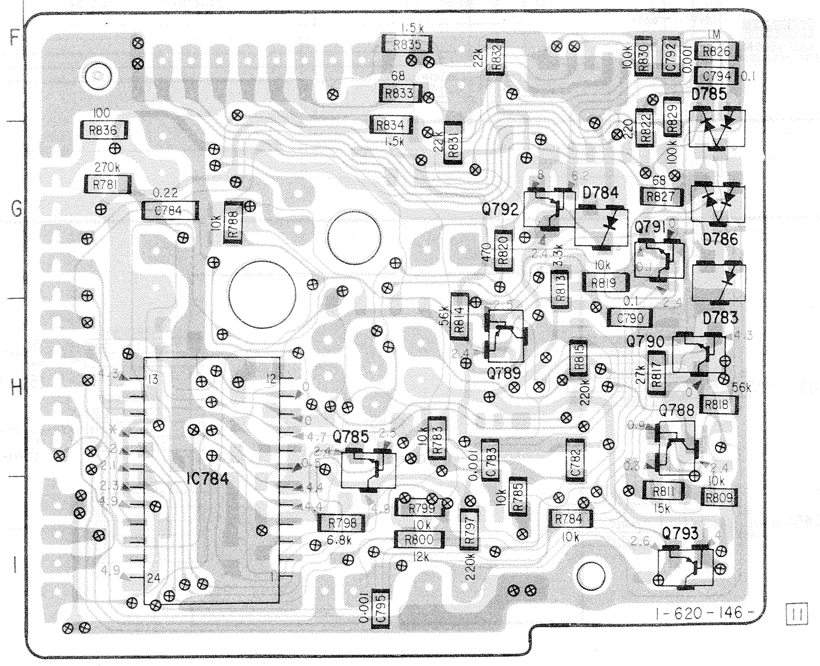
AI-1 BOARD(COMPONENT SIDE) no mark : CAMERA POWER SW ON mode
✻ : can not be measured

D781	B-1
D782	B-1
D783	H-4
D784	G-4
D785	G-4
D786	G-4
D789	B-1
IC781	B-3
IC782	D-4
IC783	B-4
IC784	H-2
Q781	C-2
Q782	B-2
Q783	A-2
Q784	A-2
Q785	I-2
Q786	C-4
Q787	B-4
Q788	H-4
Q789	H-3
Q790	H-4
Q791	G-4
Q792	G-3
Q793	I-4
RV781	C-3
RV782	C-2
TP781	B-2
TP784	B-2


IC781
IC782
IC783
Q781
Q782
Q783
Q784
Q786
Q787
D781
D782
D789
CN781
CN782
W781
W782
RV781 4.7k
RV782 22k
TP781
TP784
1-620-146-


CN781 (WHT)
DRIVE(+)
DRIVE(−)
CONT(+)
CONT(−)
BIAS(+)
HALL(−)
HALL(+)
BIAS(+)
IRIS MOTOR
M
HALL DEVICE

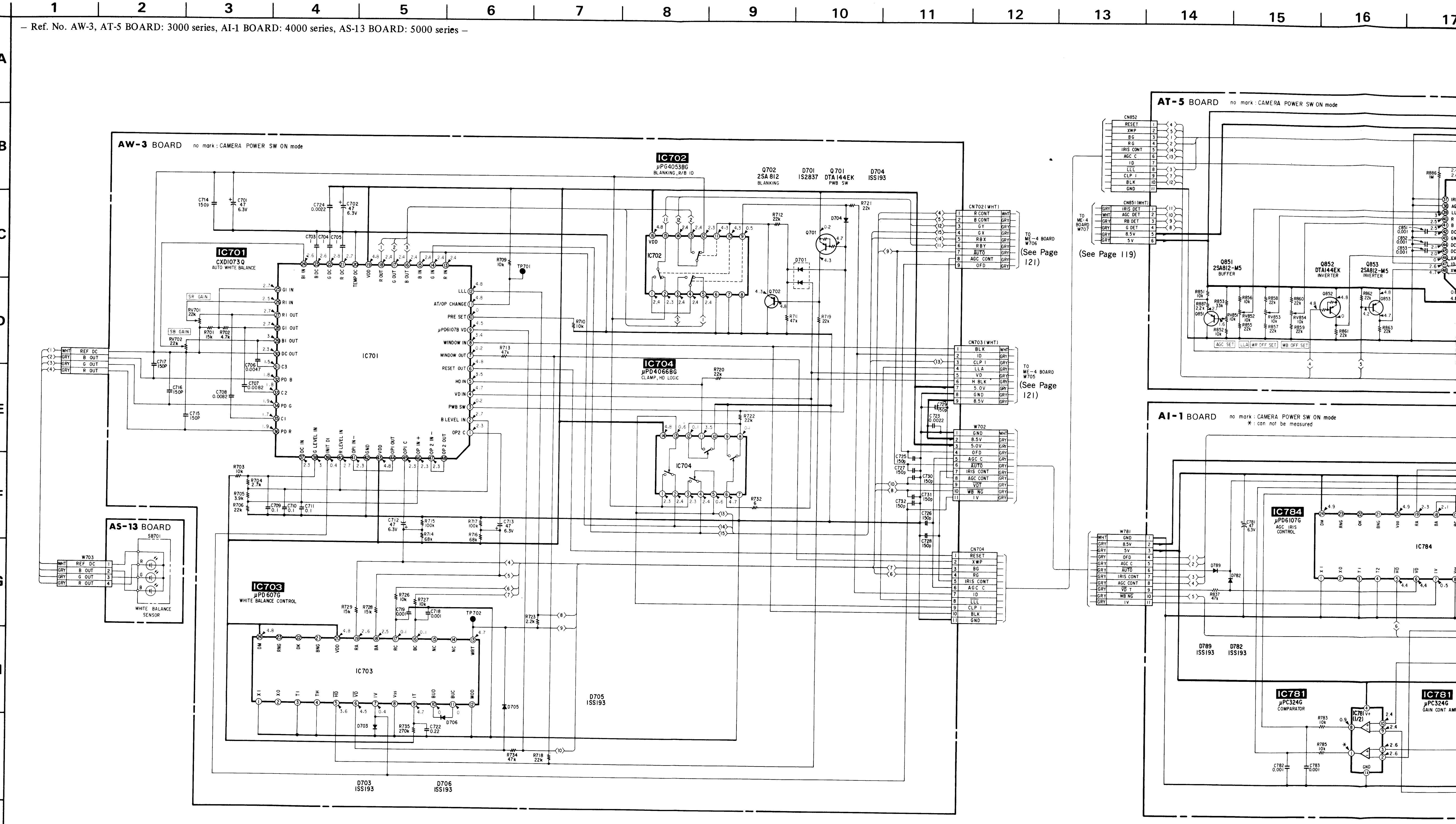
AI-1 BOARD(SOLDER SIDE)

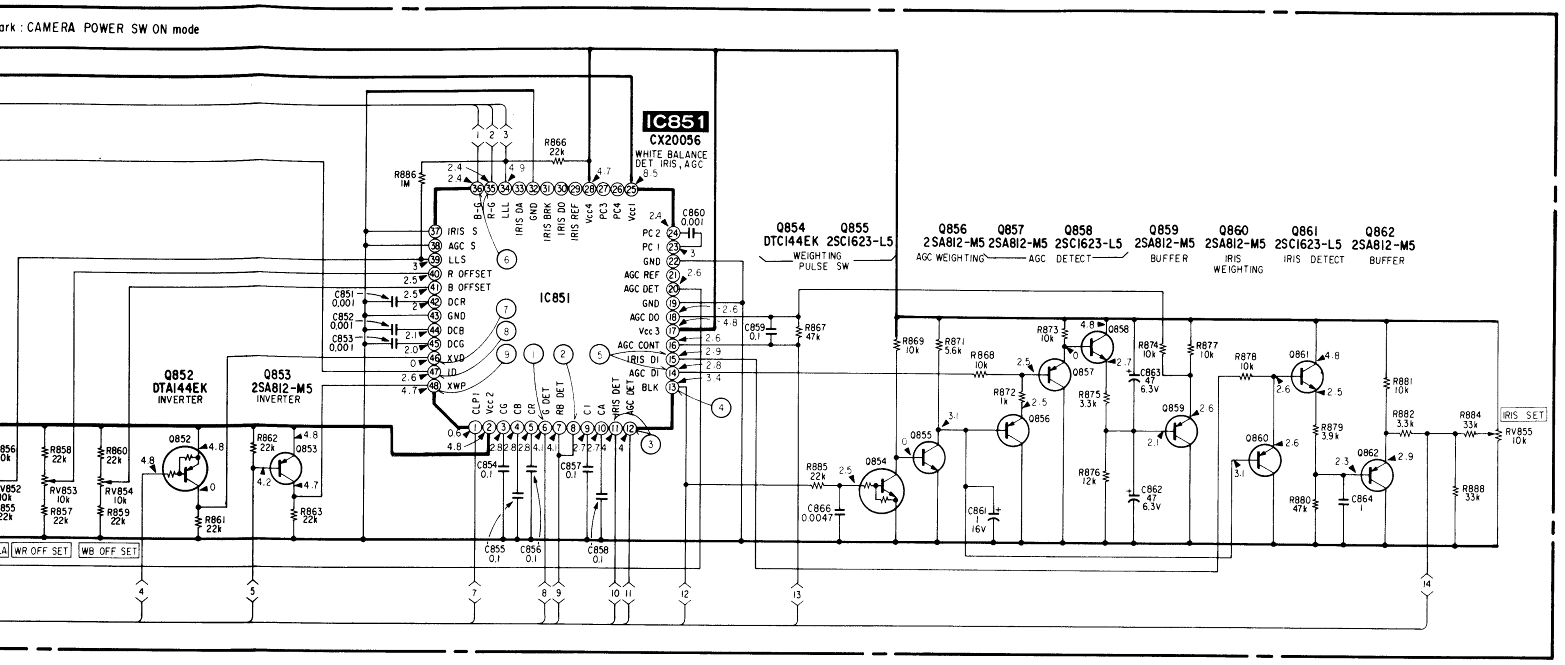

IC784
Q785
Q788
Q789
Q790
Q791
Q792
Q793
D783
D784
D785
D786
1-620-146-

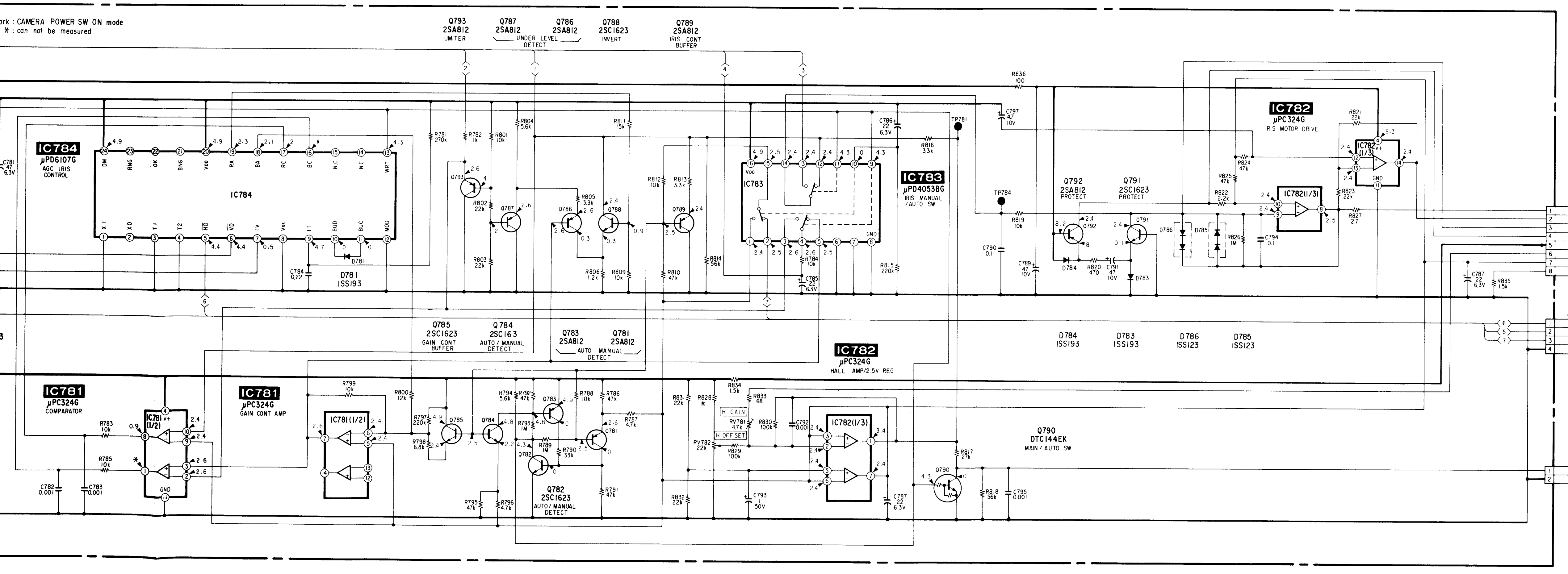
no mark : CAMERA POWER SW ON mode
✻ : can not be measured

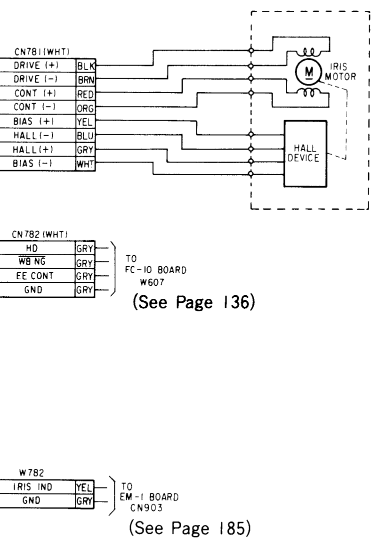
AW-3 (AUTO WHITE BALANCE), AT-5 (WHITE BALANCE, IRIS, AGC DETECTION), AS-13 (WHITE BALANCE SENSOR), AI-1 (AGC, IRIS CONTROL) SCHEMATIC DIAGRAM

– Ref. No. AW-3, AT-5 BOARD: 3000 series, AI-1 BOARD: 4000 series, AS-13 BOARD: 5000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
A
B
C
D
E
F
G
H
AW-3 BOARD no mark : CAMERA POWER SW ON mode
IC701
CXD1073Q
AUTO WHITE BALANCE
IC702
μPG4053BG
BLANKING, R/B ID
Q702
2SA812
BLANKING
D701
1S2837
Q701
DTA144EK
PWB SW
D704
1SS193
IC703
μPD607G
WHITE BALANCE CONTROL
IC704
μPD4066BG
CLAMP, HD LOGIC
D703
1SS193
D705
1SS193
D706
1SS193
SR GAIN
SB GAIN
TP701
TP702
REF DC
B OUT
G OUT
R OUT
AS-13 BOARD
S8701
WHITE BALANCE SENSOR
W703
CN702 (WHT)
R CONT
B CONT
GY
GX
RBX
RBY
AUTO
AGC CONT
OFD
TO ME-4 BOARD W706
(See Page 121)
CN703 (WHT)
BLK
ID
CLP I
LLA
VD
H BLK
5.0V
GND
8.5V
TO ME-4 BOARD W705
(See Page 121)
W702
GND
8.5V
5.0V
OFD
AGC C
AUTO
IRIS CONT
AGC CONT
VDT
WB NG
IV
CN704
RESET
XWP
BG
RG
IRIS CONT
AGC C
ID
LLL
CLP I
BLK
GND
AT-5 BOARD no mark : CAMERA POWER SW ON mode
CN852
RESET
XWP
BG
RG
IRIS CONT
AGC C
ID
LLL
CLP I
BLK
GND
CN851 (WHT)
IRIS DET
AGC DET
RB DET
G DET
8.5V
5V
TO ME-4 BOARD W707
(See Page 119)
Q851
2SA812-M5
BUFFER
Q852
DTA144EK
INVERTER
Q853
2SA812-M5
INVERTER
AGC SET
LLA
WR OFF SET
WB OFF SET
AI-1 BOARD no mark : CAMERA POWER SW ON mode
* : can not be measured
W781
GND
8.5V
5V
OFD
AGC C
AUTO
IRIS CONT
AGC CONT
VD T
WB NG
IV
IC784
μPD6107G
AGC IRIS CONTROL
D789
1SS193
D782
1SS193
IC781
μPC324G
COMPARATOR
IC781
μPC324G
GAIN CONT AMP


ark : CAMERA POWER SW ON mode
IC851
CX20056
WHITE BALANCE DET IRIS, AGC
IRIS S
AGC S
LLS
R OFFSET
B OFFSET
DCR
GND
DCB
DCG
XVD
ID
XWP
B-G
R-G
LLL
IRIS DA
IRIS BRK
IRIS DO
IRIS REF
Vcc4
PC3
PC4
Vcc1
PC2
PC1
AGC REF
AGC DET
AGC DO
Vcc3
AGC CONT
IRIS DI
AGC DI
BLK
CLP1
Vcc2
CG
CB
CR
G DET
RB DET
C1
CA
IRIS DET
R866 22k
R886 1M
C851 0.001
C852 0.001
C853 0.001
C854 0.1
C855 0.1
C856 0.1
C857 0.1
C858 0.1
C859 0.1
C860 0.001
R867 47k
Q852
DTA144EK
INVERTER
Q853
2SA812-M5
INVERTER
R858 22k
R860 22k
RV853 10k
RV854 10k
R857 22k
R859 22k
R861 22k
R862 22k
R863 22k
WR OFF SET
WB OFF SET
Q854 DTC144EK
Q855 2SC1623-L5
WEIGHTING PULSE SW
Q856 2SA812-M5
Q857 2SA812-M5
AGC WEIGHTING
Q858 2SC1623-L5
AGC DETECT
Q859 2SA812-M5
BUFFER
Q860 2SA812-M5
IRIS WEIGHTING
Q861 2SC1623-L5
IRIS DETECT
Q862 2SA812-M5
BUFFER
R869 10k
R871 5.6k
R868 10k
R873 10k
R872 1k
R874 10k
R875 3.3k
R876 12k
R877 10k
R878 10k
R879 3.9k
R880 47k
R881 10k
R882 3.3k
R884 33k
R885 22k
R888 33k
C861 1 16V
C862 47 6.3V
C863 47 6.3V
C864 1
C866 0.0047
IRIS SET
RV855 10k


ark : CAMERA POWER SW ON mode
* : can not be measured
Q793 2SA812 UMITER
Q787 2SA812
Q786 2SA812
UNDER LEVEL DETECT
Q788 2SC1623 INVERT
Q789 2SA812 IRIS CONT BUFFER
IC784
μPD6107G
AGC IRIS CONTROL
DM
RNG
OK
BNG
VDD
RA
BA
RC
BC
N.C
WRT
XI
XO
TI
T2
HD
VD
IV
Vss
IT
BUD
BUC
MOD
D781 1SS193
C784 0.22
R781 270k
R782 1k
R801 10k
R802 22k
R803 22k
R804 5.6k
R805 3.3k
R806 1.2k
R809 10k
R810 47k
R811 15k
R812 10k
R813 3.3k
R814 56k
R815 220k
R816 3.3k
R784 10k
C785 22 6.3V
C786 22 6.3V
IC783
μPD4053BG
IRIS MANUAL /AUTO SW
TP781
TP784
R836 100
C797 47 10V
IC782
μPC324G
IRIS MOTOR DRIVE
IC782(1/3)
R821 22k
R822 2.2k
R823 22k
R824 47k
R825 47k
R827 27
R819 10k
C790 0.1
C789 47 10V
Q792 2SA812 PROTECT
Q791 2SC1623 PROTECT
D784
R820 470
C791 47 10V
D783
D786
D785
R826 1M
C794 0.1
C787 22 6.3V
R835 1.5k
Q785 2SC1623 GAIN CONT BUFFER
Q784 2SC163 AUTO/MANUAL DETECT
Q783 2SA812
Q781 2SA812
AUTO MANUAL DETECT
D784 1SS193
D783 1SS193
D786 1SS123
D785 1SS123
IC782
μPC324G
HALL AMP/2.5V REG
IC781
μPC324G
COMPARATOR
IC781
μPC324G
GAIN CONT AMP
IC781(1/2)
R783 10k
R785 10k
C782 0.001
C783 0.001
R799 10k
R800 12k
R797 220k
R798 6.8k
R794 5.6k
R792 47k
R793 1M
R789 1M
R790 33k
R788 10k
R786 47k
R787 4.7k
R791 47k
R795 47k
R796 4.7k
Q782
2SC1623
AUTO/MANUAL DETECT
R831 22k
R832 22k
R828
R834 1.5k
R833 68
H GAIN
RV781 4.7k
H OFF SET
RV782 22k
R829 100k
R830 100k
C792 0.001
C793 1 50V
R817 27k
Q790
DTC144EK
MAIN/AUTO SW
R818 56k
C795 0.001
C787 22 6.3V


CN781(WHT)
DRIVE (+)
DRIVE (−)
CONT (+)
CONT (−)
BIAS (+)
HALL (−)
HALL (+)
BIAS (−)
BLK
BRN
RED
ORG
YEL
BLU
GRY
WHT
M
IRIS MOTOR
HALL DEVICE
CN782 (WHT)
HD
WB NG
EE CONT
GND
GRY
TO FC-10 BOARD W607
W782
IRIS IND
GND
YEL
GRY
TO EM-1 BOARD CN903

(See Page 136)

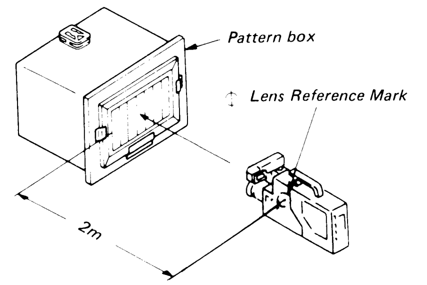
(See Page 185)

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat. .
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- Measuring conditions of voltage value and waveform
  (1) The subject is color bar of pattern box.
  (2) The voltage value is a reference value between the grounding.
  (The tester used is the digital multimeter DC10MΩ)

When indicating parts by reference number, please include the board name.

1. Connection


Pattern box
Lens Reference Mark
2m

2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

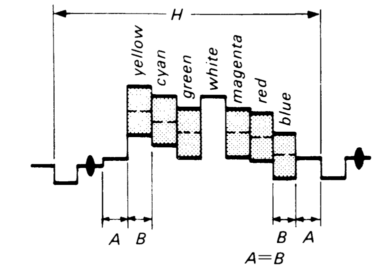

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A=B

Fig. a Camera output waveform of TP202 (Pin 3 of CN201) on VI-21 board

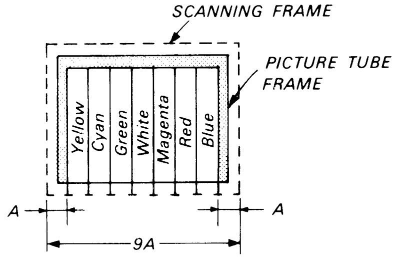

SCANNING FRAME
PICTURE TUBE FRAME
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
A
9A

Fig. b Picture of TV monitor screen

CG-1 (TITLE, OCCURING DATE), FC-10 (CAMERA SYSTEM CONTROL CAMERA FUNCTION KEY MATRIX), TI-8 (CAMERA FUNCTION KEY MATRIX) PRINTED WIRING BOARD

– Ref. No. CG-1 BOARD: 1000 series, FC-10 BOARD: 2000 series, TI-8 BOARD: 3000 series –

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the **component side.**
- ●— : lead wire attached to the **soldering side.**
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (FC-10: Q601, 602, 603, 604, 609, 622, CG-1: Q671, 673, 674, TI-8: Q691, 692, 693) transistor with resistors. Refer to the FC-10, CG-1, TI-8 boards schematic diagram for digital transistor.

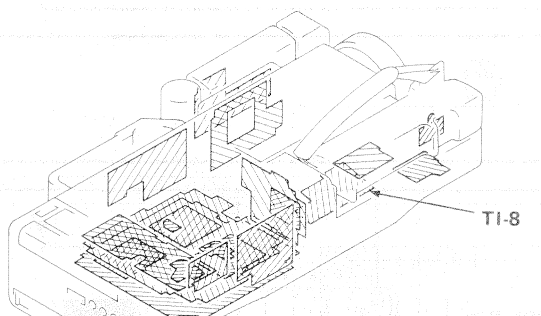
Note

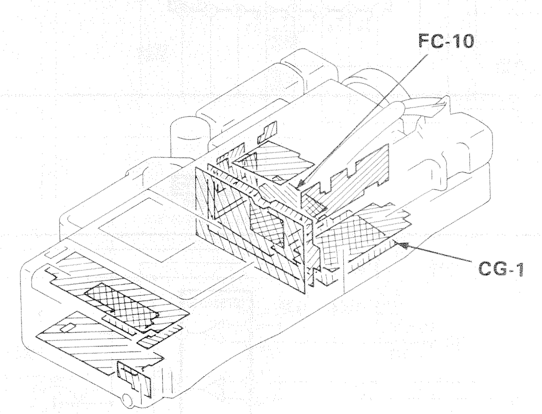
Soldering side:	Parts on the soldering side being seen from the soldering are stated.
Component side:	Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

* Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).

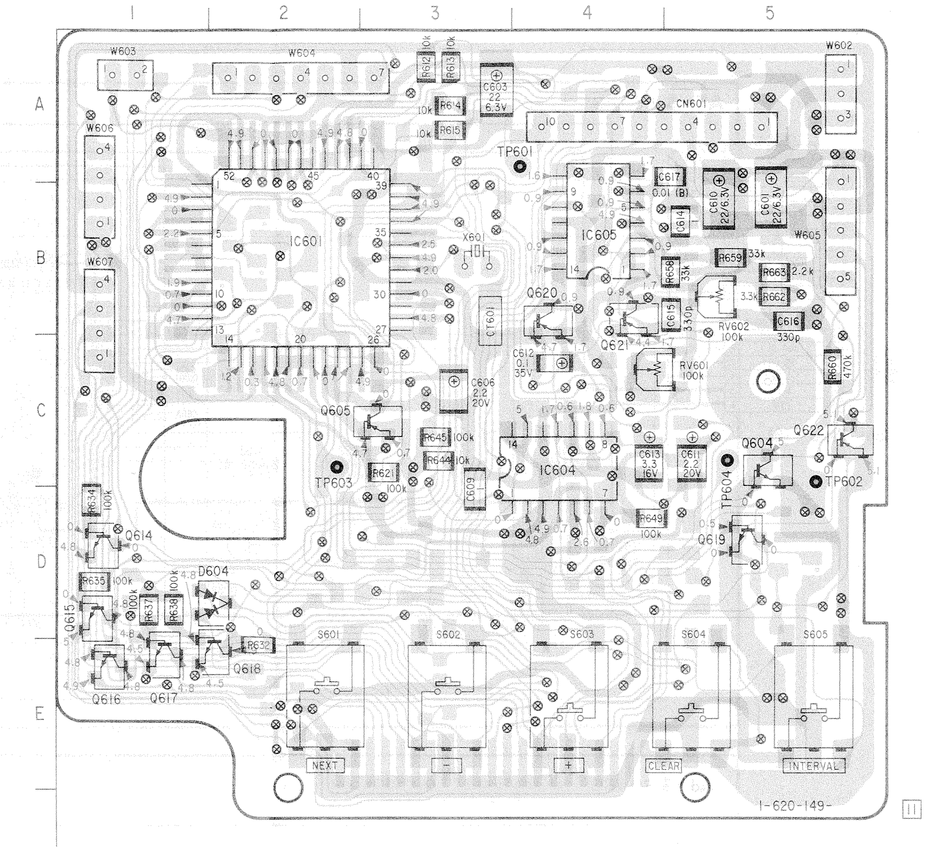
* Pattern being seen in the state of the rear surface side is indicated in green pattern.



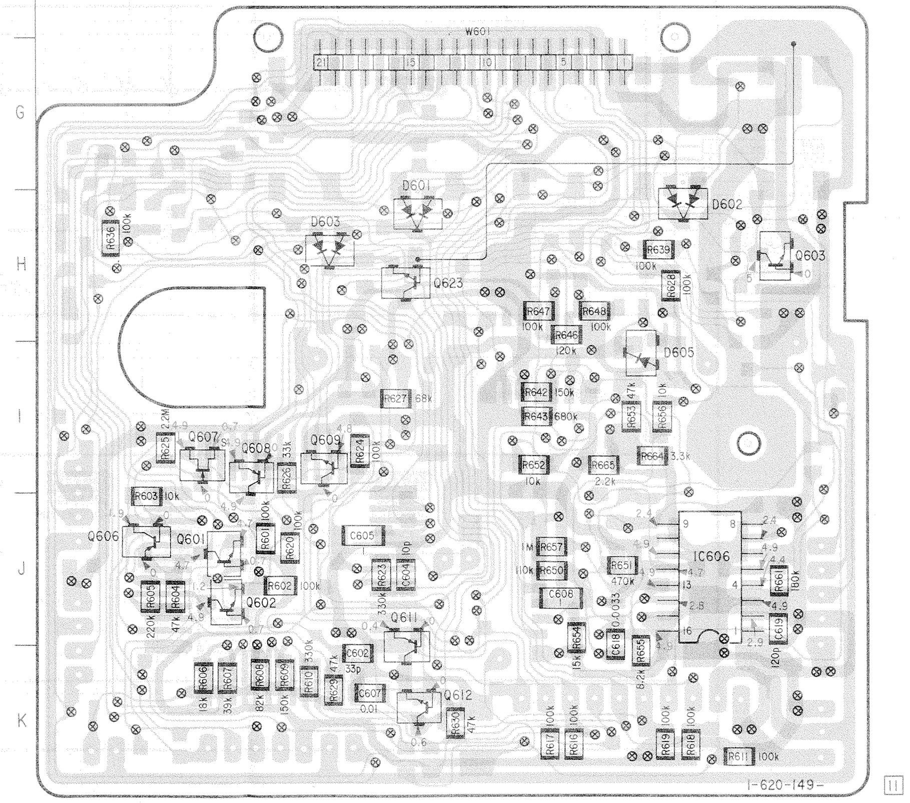


CT601	B - 3
D601	H - 3
D602	H - 5
D603	H - 2
D604	D - 1
D605	I - 5
IC601	B - 2
IC604	C - 4
IC605	B - 4
IC606	J - 5
Q601	J - 2
Q602	J - 2
Q603	H - 3
Q604	C - 5
Q605	C - 3
Q606	J - 1
Q607	I - 1
Q608	I - 2
Q609	I - 2
Q611	J - 3
Q612	K - 3
Q614	D - 1
Q615	D - 1
Q616	E - 1
Q617	E - 1
Q618	E - 1
Q619	D - 5
Q620	B - 4
Q621	B - 4
Q622	C - 5
RV601	C - 5
RV602	B - 5
TP601	A - 4
TP602	D - 5
TP603	C - 2
TP604	C - 5

FC-10 BOARD (COMPONENT SIDE) no mark : CAMERA POWEP SW ON mode

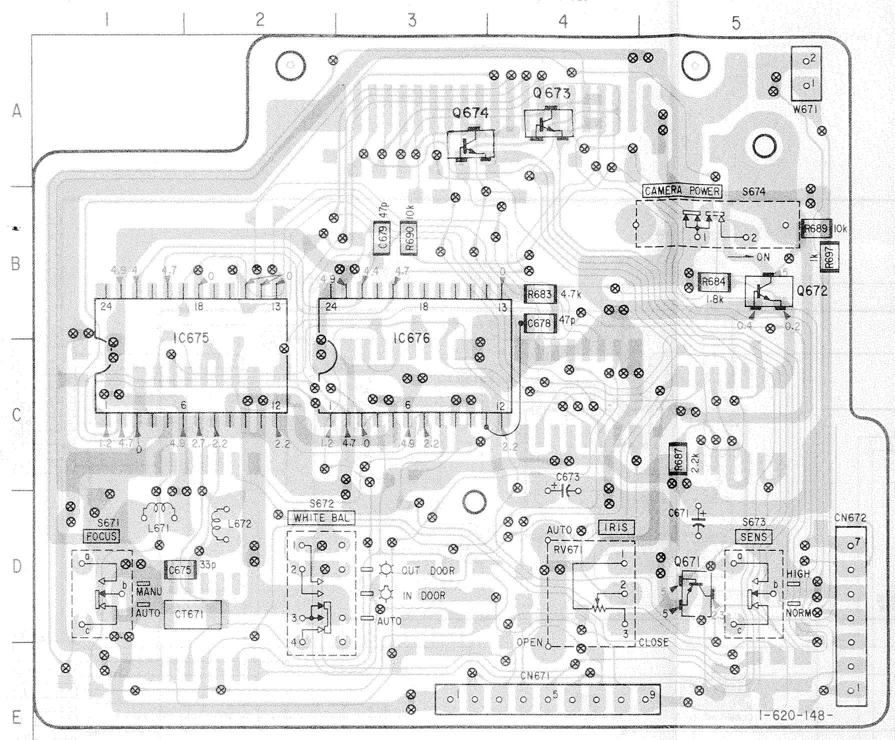

1
2
3
4
5
A
B
C
D
E
IC601
IC604
IC605
Q605
Q614
Q615
Q616
Q617
Q618
Q619
Q620
Q621
Q622
Q604
D604
TP601
TP602
TP603
CN601
W602
W603
W604
W605
W606
W607
S601
S602
S603
S604
S605
NEXT
−
+
CLEAR
INTERVAL
1-620-149-

FC-10 BOARD (SOLDER SIDE) no mark : CAMERA POWER SW ON mode

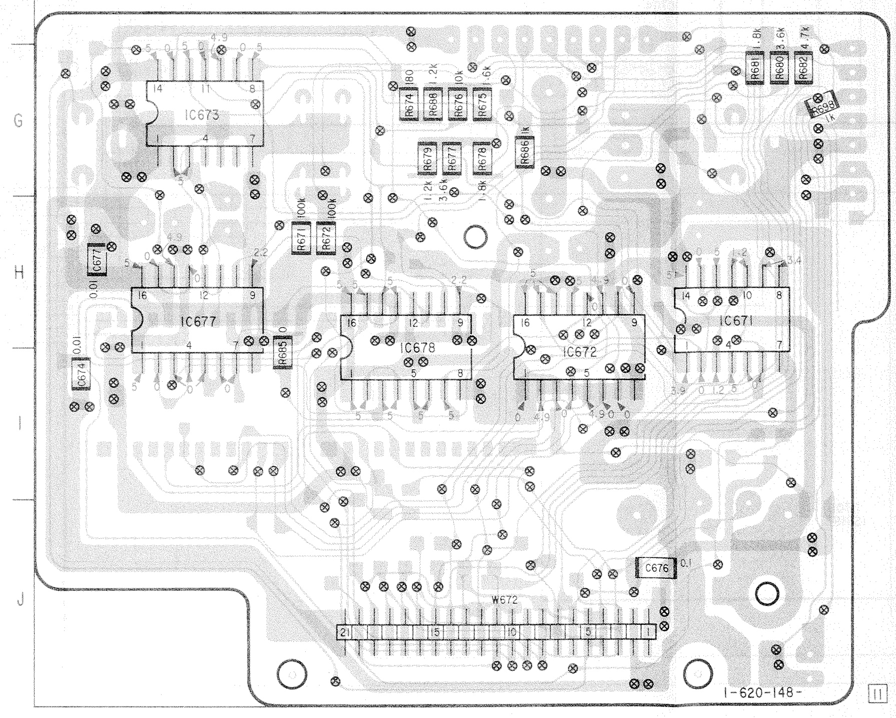

F
G
H
I
J
K
W601
D601
D602
D603
D605
Q601
Q602
Q603
Q606
Q607
Q608
Q609
Q611
Q612
Q623
IC606
1-620-149-

CT671	D - 1
IC671	H - 5
IC672	H - 4
IC673	G - 1
IC675	C - 1
IC676	C - 3
IC677	H - 1
IC678	H - 3
Q671	D - 5
Q672	B - 5
Q673	A - 4
Q674	A - 3
RV671	D - 4

CG-1 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode

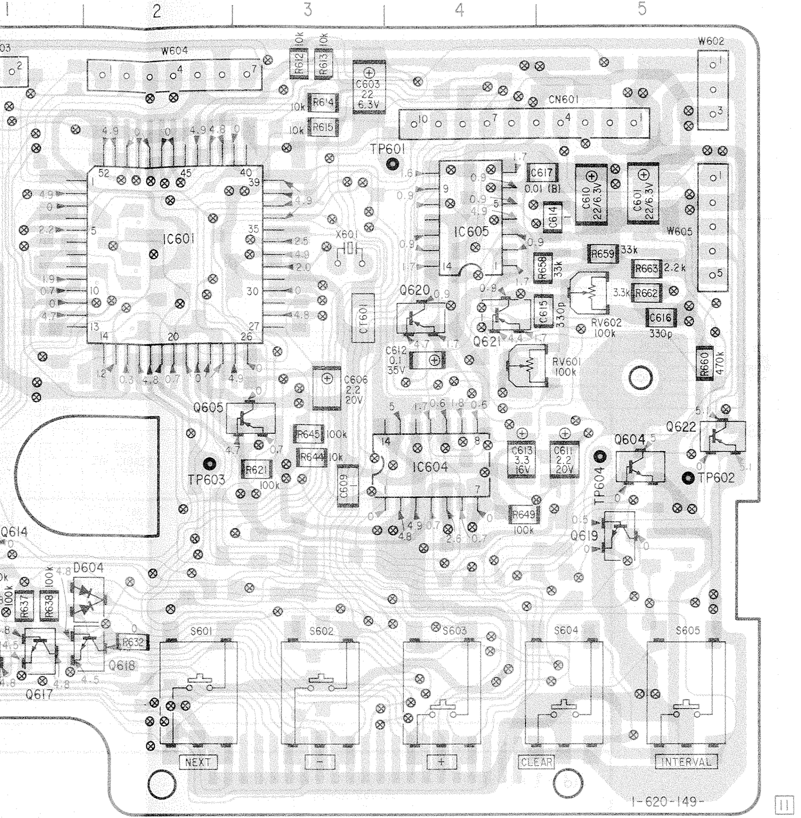

1
2
3
4
5
A
B
C
D
E
Q673
Q674
Q672
Q671
IC675
IC676
CAMERA POWER
S674
ON
S671
FOCUS
MANU
AUTO
CT671
S672
WHITE BAL
OUT DOOR
IN DOOR
AUTO
AUTO
IRIS
RV671
OPEN
CLOSE
S673
SENS
HIGH
NORM
CN671
CN672
W671
1-620-148-

CG-1 BOARD (SOLDER SIDE) no mark : CAMERA POWER SW ON mode

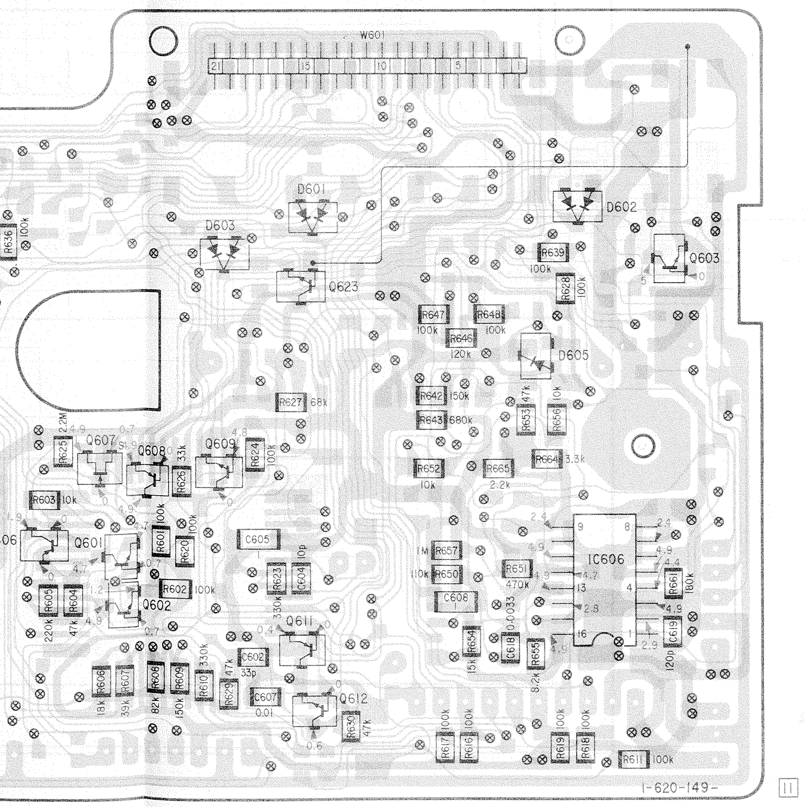

F
G
H
I
J
IC673
IC677
IC678
IC672
IC671
W672
1-620-148-

AMERA SYSTEM CONTROL CAMERA FUNCTION KEY MATRIX), TI-8 (CAMERA FUNCTION KEY MATRIX) PRINTED WIRING BOARD

D: 2000 series, TI-8 BOARD: 3000 series –

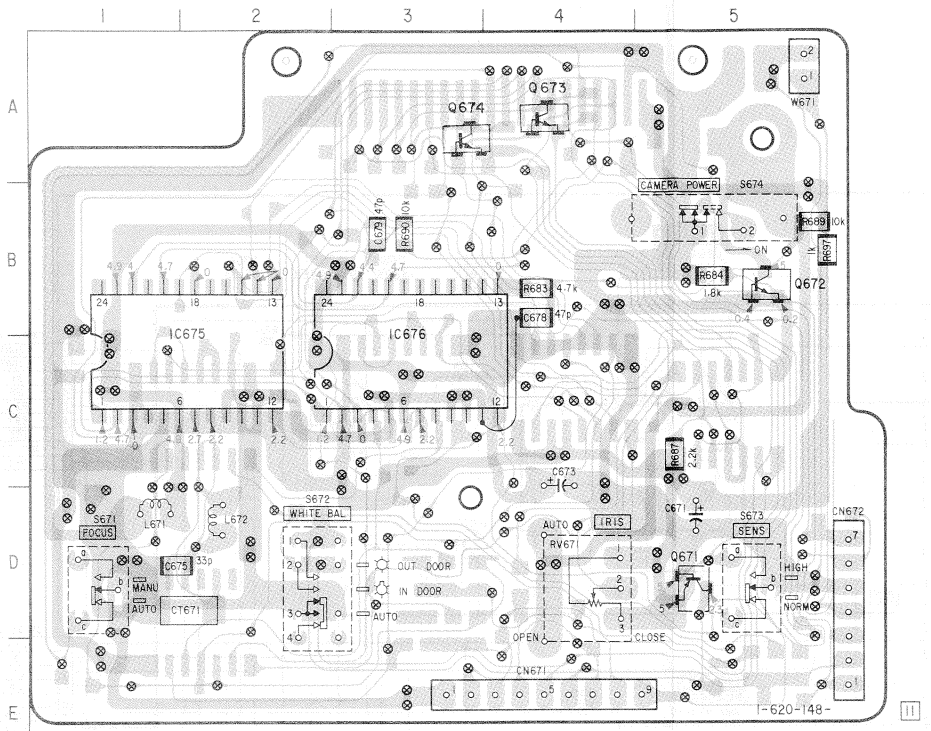


10 BOARD (COMPONENT SIDE) no mark : CAMERA POWEP SW ON mode

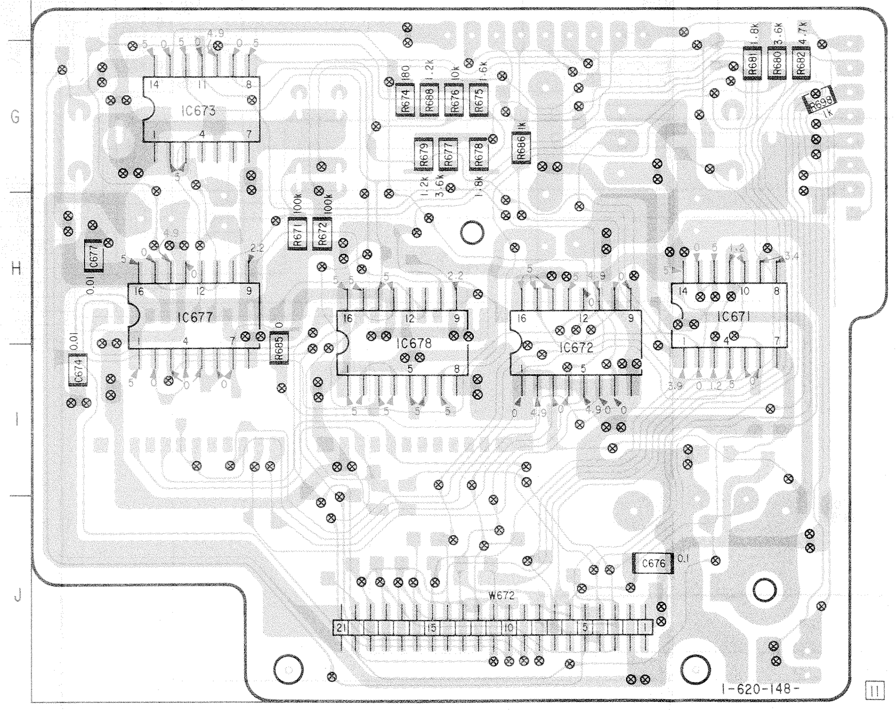


10 BOARD (SOLDER SIDE) no mark : CAMERA POWER SW ON mode

CT671	D - 1
IC671	H - 5
IC672	H - 4
IC673	G - 1
IC675	C - 1
IC676	C - 3
IC677	H - 1
IC678	H - 3
Q671	D - 5
Q672	B - 5
Q673	A - 4
Q674	A - 3
RV671	D - 4

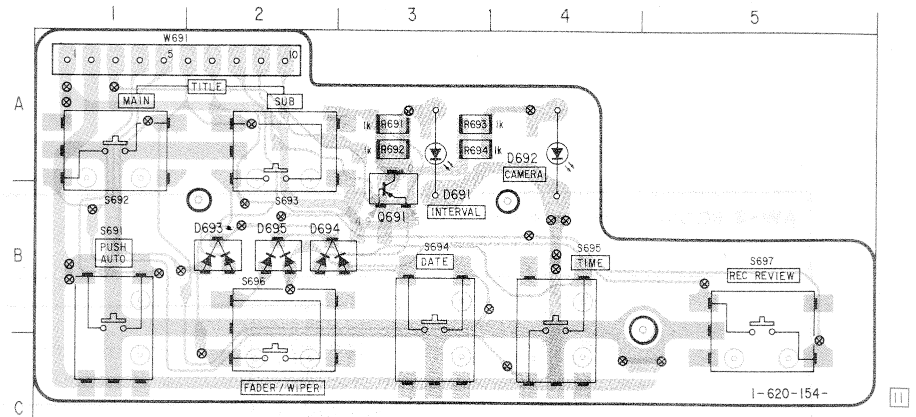


CG-1 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode

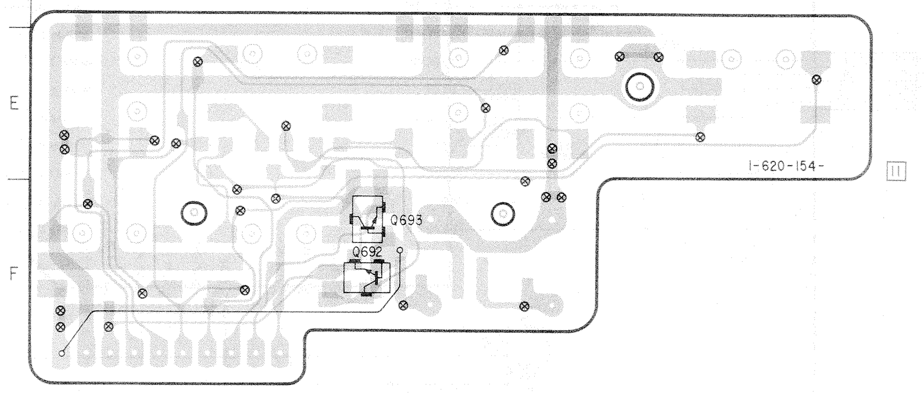


CG-1 BOARD (SOLDER SIDE) no mark : CAMERA POWER SW ON mode

D691	A - 3
D692	A - 4
D693	B - 2
D694	B - 2
D695	B - 2
Q691	B - 3
Q692	F - 3
Q693	F - 3

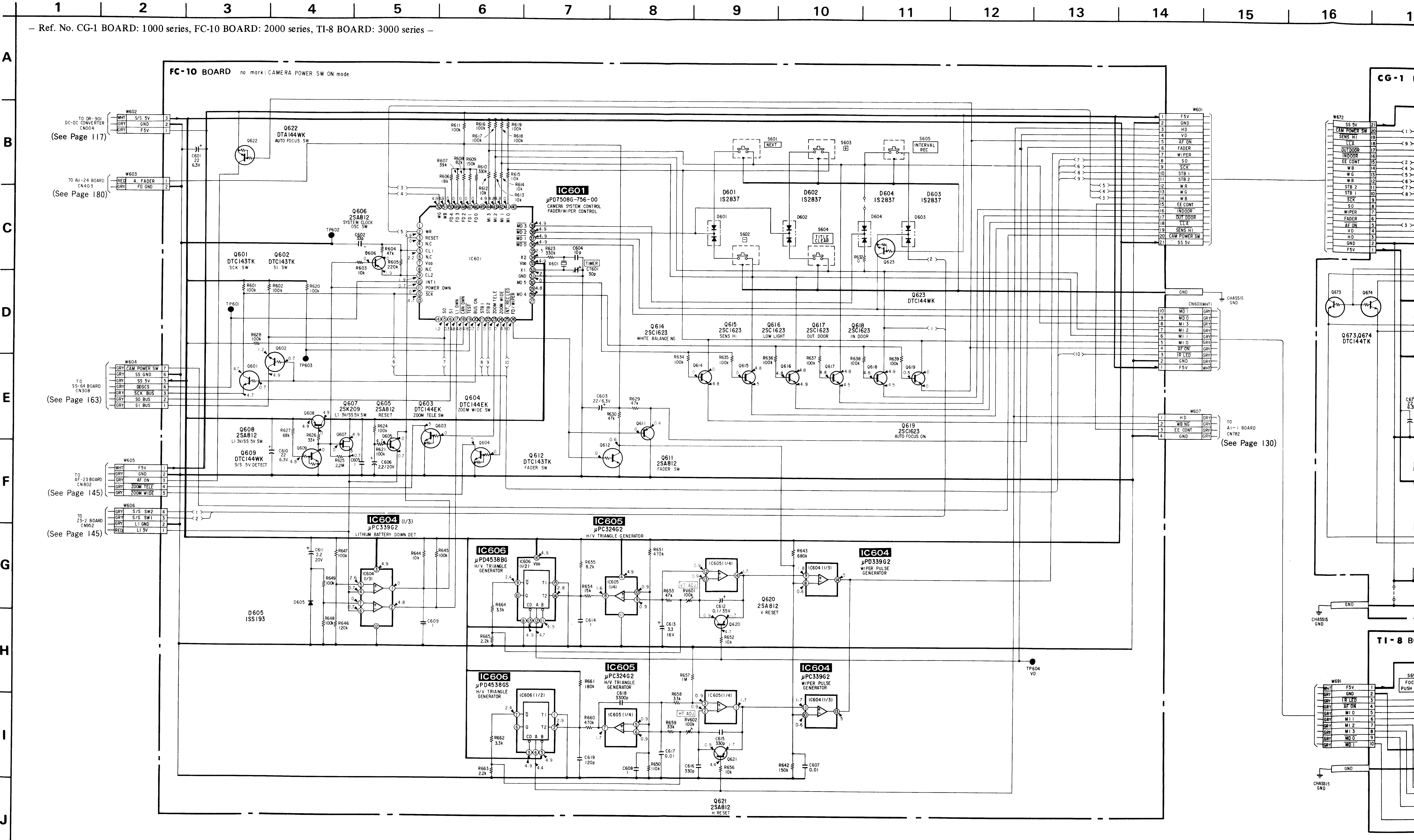


TI-8 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode



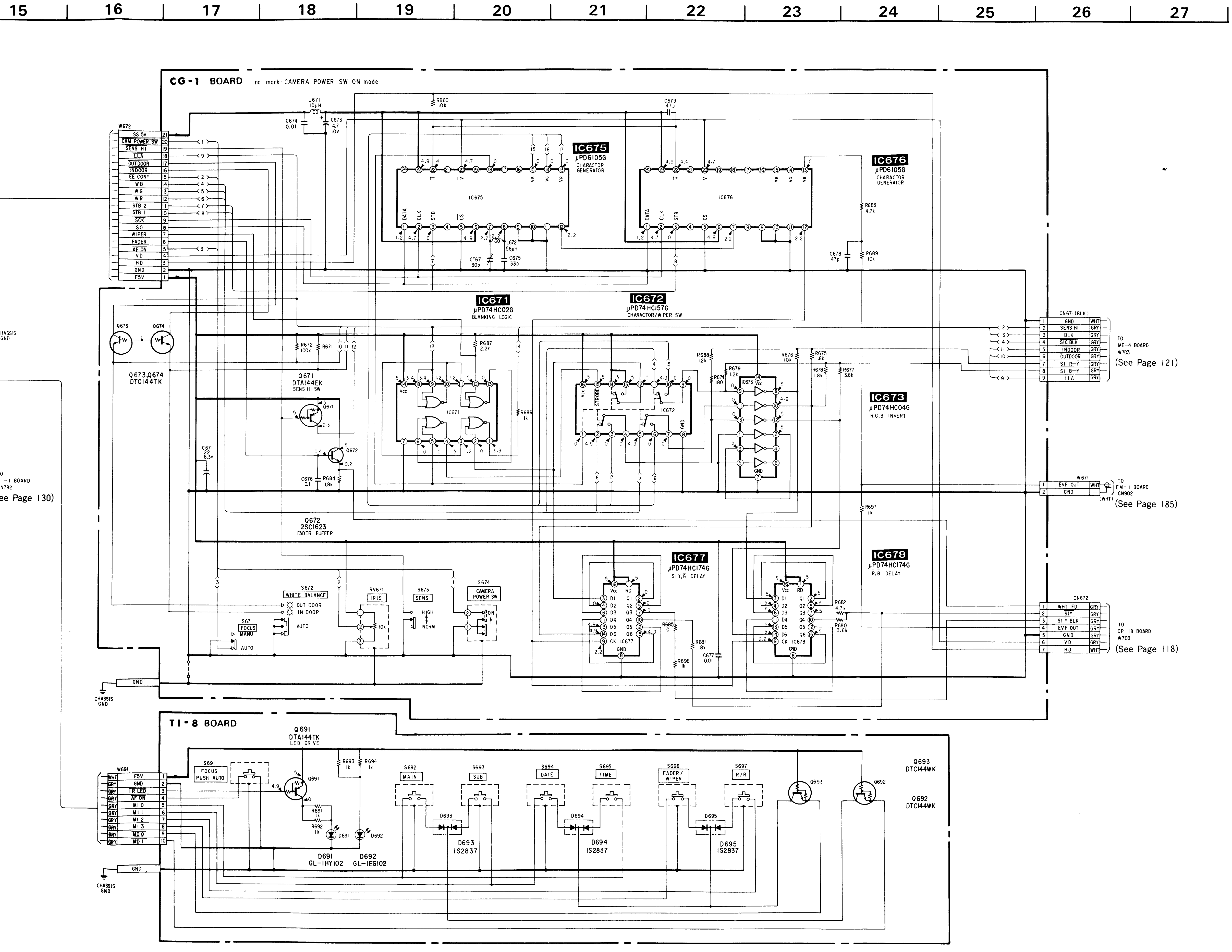
TI-8 BOARD (SOLDER SIDE) no mark : CAMARA POWER SW ON mode

CG-1 (TITLE, OCCURING DATE), FC-10 (CAMERA SYSTEM CONTROL CAMERA FUNCTION KEY MATRIX), TI-8 (CAMERA FUNCTION KEY MATRIX) SCHEMATIC DIAGRAM



– Ref. No. CG-1 BOARD: 1000 series, FC-10 BOARD: 2000 series, TI-8 BOARD: 3000 series –

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
FC-10 BOARD no mark: CAMERA POWER SW ON mode
TO DR-901 DC-DC CONVERTER CN004 (See Page 117)
TO AU-24 BOARD CN403 (See Page 180)
TO SS-64 BOARD CN308 (See Page 163)
TO AF-23 BOARD CN802 (See Page 145)
TO ZS-2 BOARD CN952 (See Page 145)
TO AI-1 BOARD CN782 (See Page 130)
W602 W603 W604 W605 W606 W601 W607 W672 W691
S/S 5V GND F5V A. FADER FD GND
CAM POWER SW SS GND SS 5V DDSCS SCK BUS SO BUS SI BUS
F5V GND AF ON ZOOM TELE ZOOM WIDE
S/S SW2 S/S SW1 LI GND LI 3V
Q622 DTA144WK AUTO FOCUS SW
IC601 μPD7508G-756-00 CAMERA SYSTEM CONTROL FADER/WIPER CONTROL
Q606 2SA812 SYSTEM CLOCK OSC SW
Q601 DTC143TK SCK SW
Q602 DTC143TK SI SW
Q608 2SA812 LI 3V/SS 5V SW
Q609 DTC144WK S/S 5V DETECT
Q607 2SK209 LI 3V/SS 5V SW
Q605 2SA812 RESET
Q603 DTC144EK ZOOM TELE SW
Q604 DTC144EK ZOOM WIDE SW
Q612 DTC143TK FADER SW
Q611 2SA812 FADER SW
S601 NEXT S602 S603 S604 TITLE CLEAR S605 INTERVAL REC
D601 1S2837 D602 1S2837 D604 1S2837 D603 1S2837
Q623 DTC144WK
Q614 2SC1623 WHITE BALANCE NG
Q615 2SC1623 SENS Hi
Q616 2SC1623 LOW LIGHT
Q617 2SC1623 OUT DOOR
Q618 2SC1623 IN DOOR
Q619 2SC1623 AUTO FOCUS ON
X601 CT601 30p TIMER
IC604 (1/3) μPC339G2 LITHIUM BATTERY DOWN DET
D605 1SS193
IC606 μPD4538BG H/V TRIANGLE GENERATOR
IC605 μPC324G2 H/V TRIANGLE GENERATOR
IC604 μPD339G2 WIPER PULSE GENERATOR
Q620 2SA812 V RESET
VT ADJ RV601 100k
HT ADJ RV602 100k
Q621 2SA812 H RESET
TP601 TP602 TP603 TP604 VD
GND CHASSIS GND
CN601(WHT)
MD I MD 0 MI 3 MI 2 MI 1 MI 0 AF ON IR LED GND F5V
HD WB NG EE CONT GND
F5V GND HD VD AF ON FADER WIPER SO SCK STB 1 STB 2 WR WG WB EE CONT INDOOR OUT DOOR LLA SENS HI CAM POWER SW SS 5V
CG-1
TI-8
Q673,Q674 DTC144TK

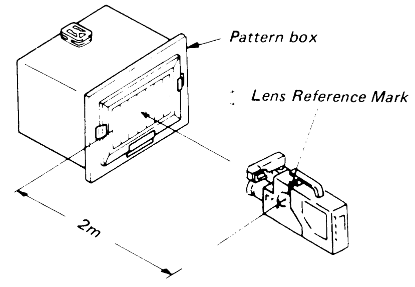

15
16
17
18
19
20
21
22
23
24
25
26
27
CG-1 BOARD
no mark: CAMERA POWER SW ON mode
W672
SS 5V
CAM POWER SW
SENS HI
LLA
OUTDOOR
INDOOR
EE CONT
WB
WG
WR
STB 2
STB 1
SCK
SO
WIPER
FADER
AF ON
VD
HD
GND
F5V
L671 10µH
C674 0.01
C673 4.7 10V
R960 10k
C679 47p
IC675
µPD6105G
CHARACTOR GENERATOR
IC676
µPD6105G
CHARACTOR GENERATOR
DATA
CLK
STB
CS
VB
VG
VR
CT671 30p
C675 33p
L672 56µH
R683 4.7k
C678 47p
R689 10k
IC671
µPD74HC02G
BLANKING LOGIC
IC672
µPD74HC157G
CHARACTOR/WIPER SW
Q673
Q674
Q673,Q674 DTC144TK
R672 100k
R671
R687 2.2k
R686 1k
Q671 DTA144EK SENS Hi SW
Q672
C671 22 6.3V
C676 0.1
R684 1.8k
Q672 2SC1623 FADER BUFFER
STROBE
R688 1.2k
R674 180
R679 1.2k
R676 10k
R675 1.6k
R678 1.8k
R677 3.6k
IC673
µPD74HC04G
R.G.B INVERT
CN671 (BLK)
GND
SENS HI
BLK
SIC BLK
INDOOR
OUTDOOR
SI R-Y
SI B-Y
LLA
TO ME-4 BOARD W703
(See Page 121)
W671
EVF OUT
GND
TO EM-1 BOARD CN902
(WHT)
(See Page 185)
R697 1k
IC677
µPD74HC174G
SIY,G DELAY
IC678
µPD74HC174G
R,B DELAY
R685 0
R681 1.8k
R698 1k
C677 0.01
R682 4.7k
R680 3.6k
CN672
WHT FD
SIY
SI Y BLK
EVF OUT
GND
VD
HD
TO CP-18 BOARD W703
(See Page 118)
S672 WHITE BALANCE
OUT DOOR
IN DOOR
AUTO
S671 FOCUS
MANU
AUTO
RV671 IRIS 10k
S673 SENS
HIGH
NORM
S674 CAMERA POWER SW
ON
GND
CHASSIS GND
HASSIS GND
-1 BOARD
N782
ee Page 130)
TI-8 BOARD
Q691 DTA144TK LED DRIVE
W691
F5V
GND
IR LED
AF ON
MI 0
MI 1
MI 2
MI 3
MD 0
MD 1
S691 FOCUS PUSH AUTO
R693 1k
R694 1k
R691 1k
R692 1k
D691 GL-1HY102
D692 GL-1EG102
S692 MAIN
S693 SUB
S694 DATE
S695 TIME
S696 FADER/WIPER
S697 R/R
D693 1S2837
D694 1S2837
D695 1S2837
Q693 DTC144WK
Q692 DTC144WK

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all µF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10MΩ)

When indicating parts by reference number, please include the board name.

1. Connection


Pattern box
Lens Reference Mark
2m

2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

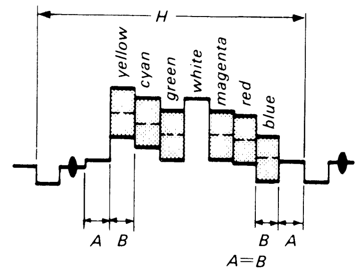


Fig. a Camera output waveform of TP202 (Pin 3 of CN201) on VI-21 board

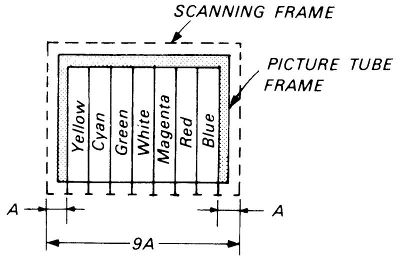

SCANNING FRAME
PICTURE TUBE FRAME
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
A
9A

Fig. b Picture of TV monitor screen

AF-23 (AUTO FOCUS, ZOOM MOTOR DRIVE), ZS-2 (START/STOP SWITCH, ZOOM SWITCH, RELAY), LI-1 (LITHIUM BATTERY STORAGE), GS-2 (START/STOP SWITCH) PRINTED WIRI

– Ref. No. AF-23, ZS-2 BOARD: 1000 series, GS-2 BOARD: 2000 series –

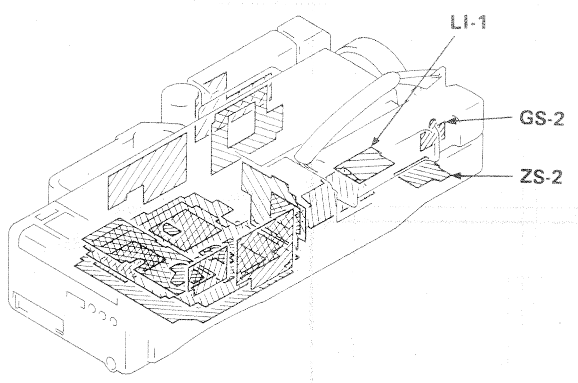
Note (Printed Wiring Board):

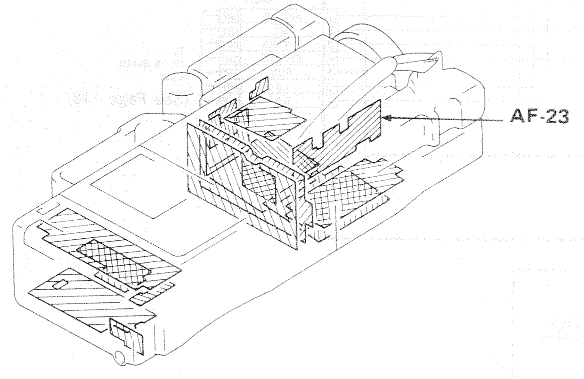
- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (AF-23: Q802, 811) transistor with resistors. Refer to the AF-23 board schematic diagram for digital transistor.

Note

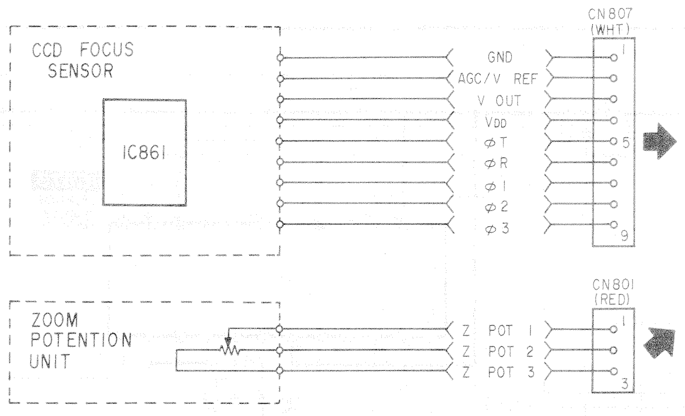
Soldering side:	Parts on the soldering side being seen from the soldering are stated.
Component side:	Parts on the component side being seen from the component are stated.

Regarding color indication of patterns
- Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- Pattern being seen in the state of the rear surface side is indicated in green pattern.

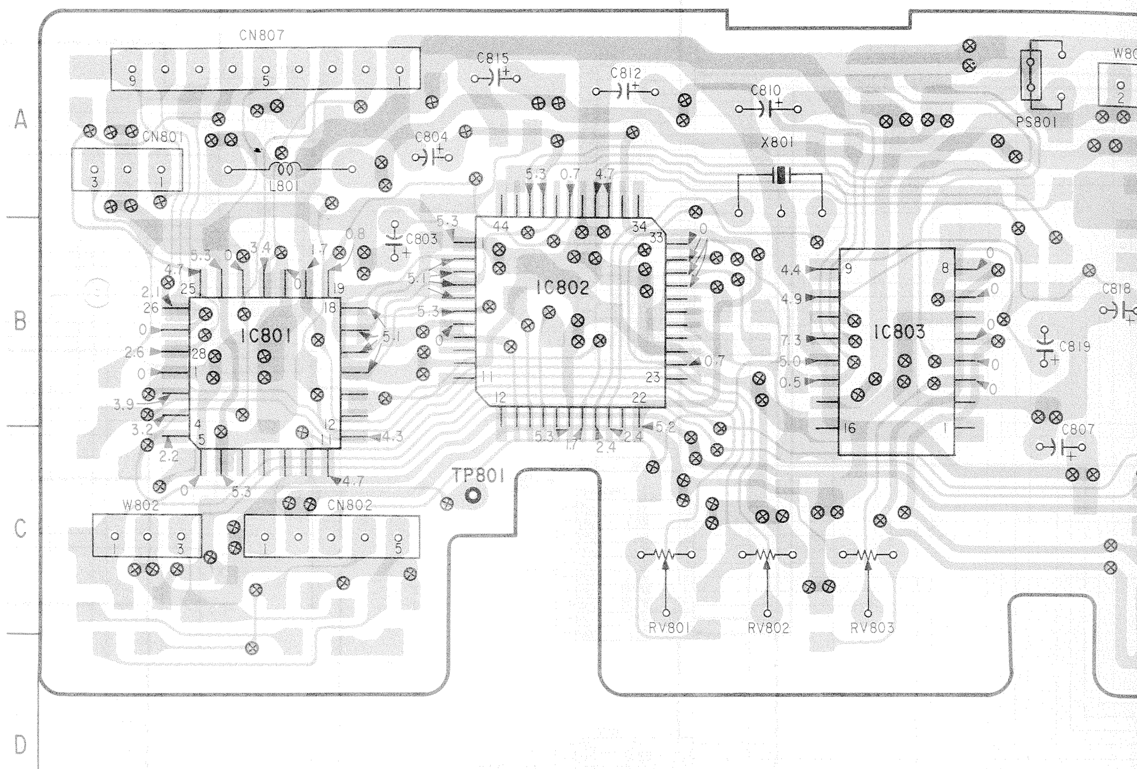




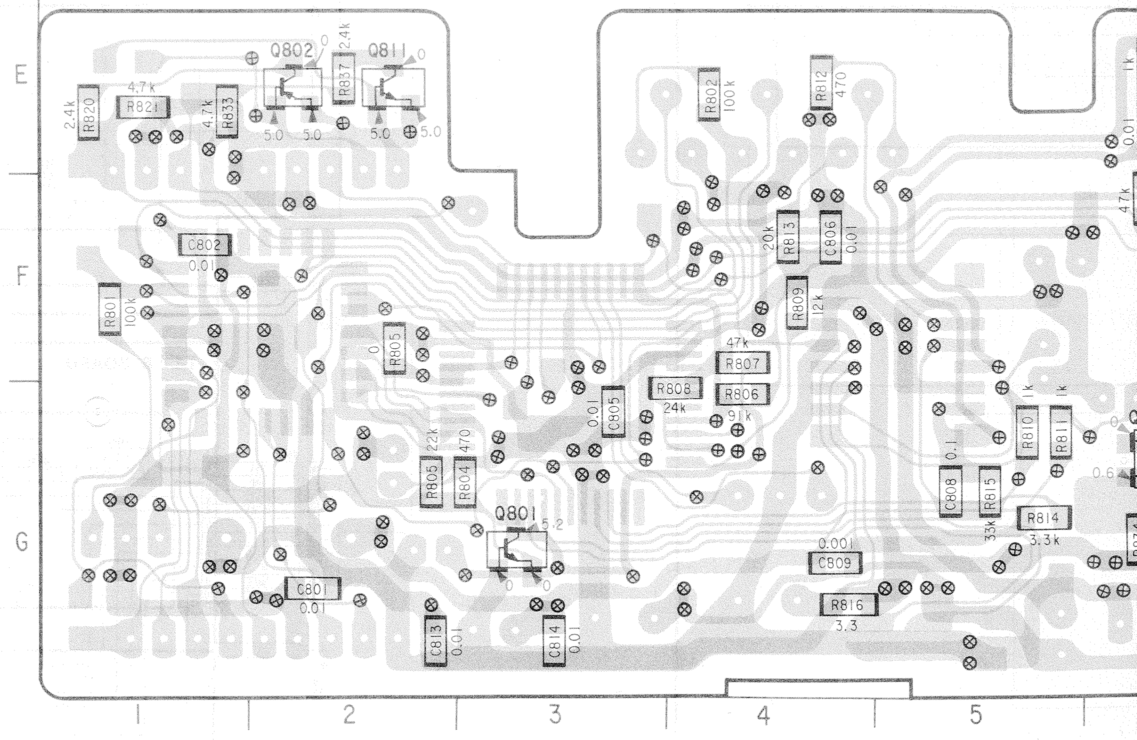
IC801	B-2
IC802	B-3
IC803	B-5
IC804	E-7
Q801	G-3
Q802	E-2
Q803	G-7
Q804	G-7
Q805	G-7
Q806	G-7
Q807	G-7
Q808	G-6
Q809	G-6
Q810	G-6
Q811	E-2
RV801	C-4
RV802	C-4
RV803	C-4


CCD FOCUS SENSOR
IC861
GND
AGC/V REF
V OUT
VDD
φT
φR
φ1
φ2
φ3
CN807 (WHT)
ZOOM POTENTION UNIT
Z POT 1
Z POT 2
Z POT 3
CN801 (RED)

AF-23 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode

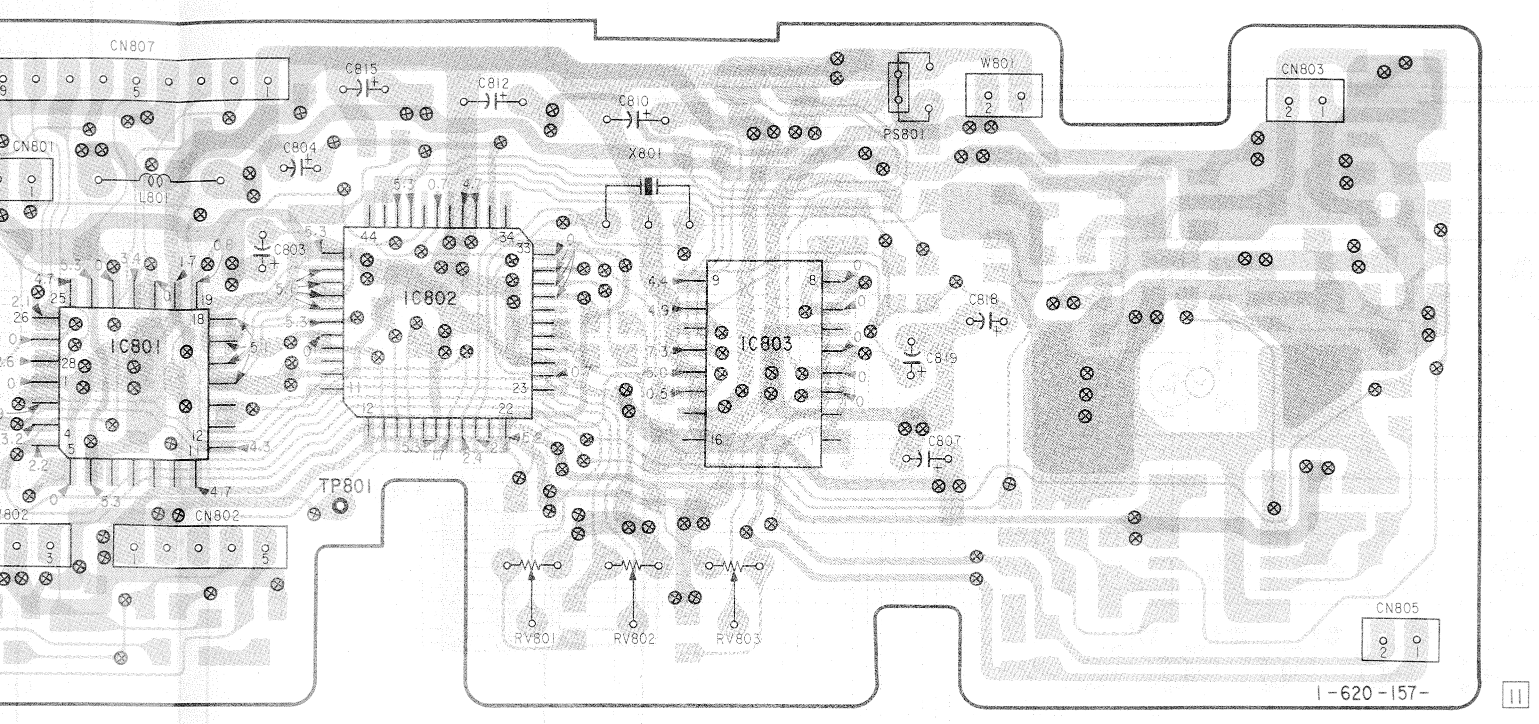

A
B
C
D
CN807
CN801
C815
C812
C810
X801
PS801
C804
L801
IC801
IC802
IC803
C803
C818
C819
C807
TP801
W802
CN802
RV801
RV802
RV803

AF-23 BOARD (SOLDER SIDE) no mark : CAMERA POWER SW ON mode

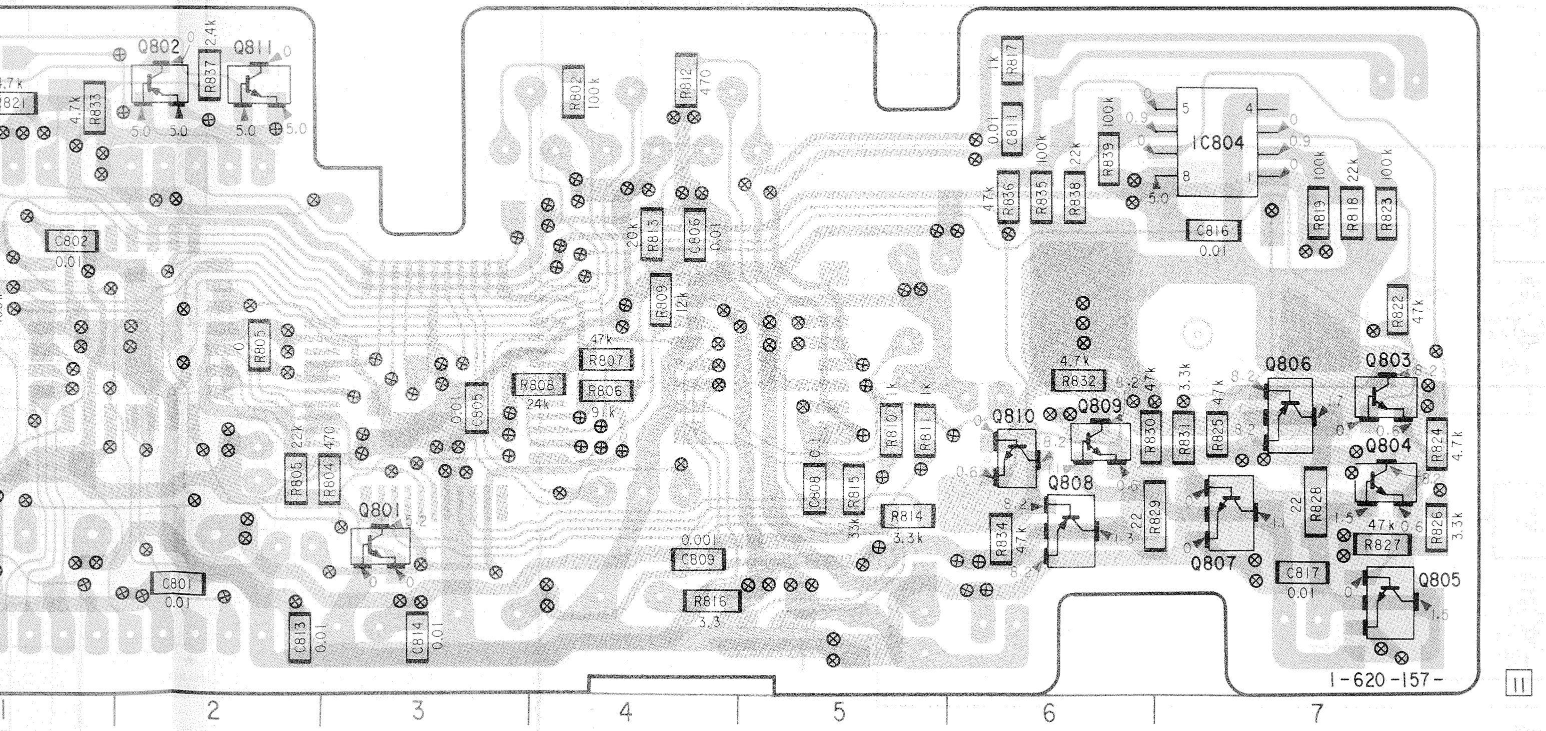

E
F
G
1
2
3
4
5
Q802
Q811
R820
R821
R833
R837
R802
R812
C802
R801
R813
C806
R809
R803
C805
R807
R808
R806
R805
R804
Q801
C801
C813
C814
C809
R816
R810
R811
C808
R815
R814

Y), LI-1 (LITHIUM BATTERY STORAGE), GS-2 (START/STOP SWITCH) PRINTED WIRING BOARD

3 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode

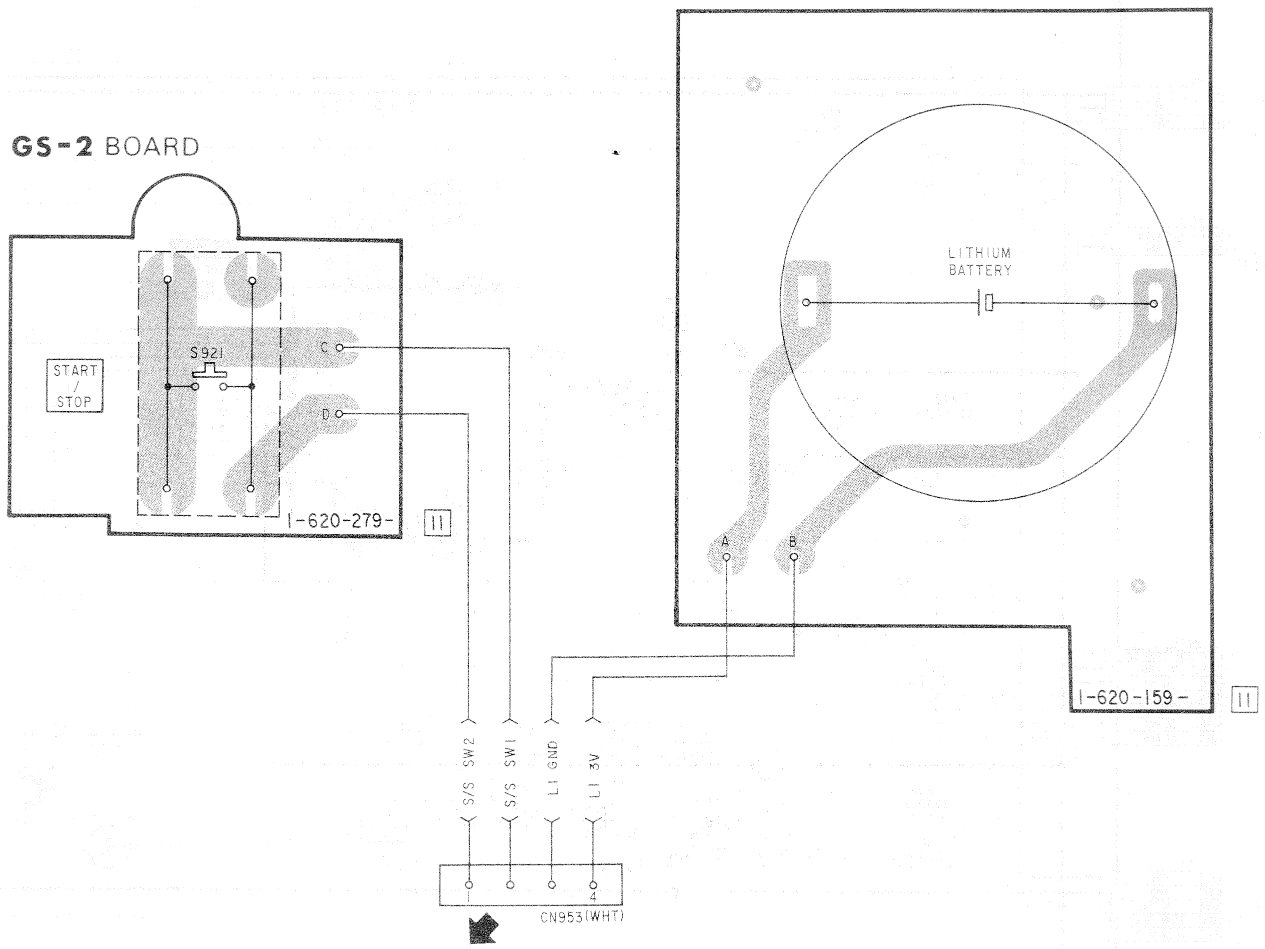

CN807
C815
C812
C810
PS801
W801
CN803
CN801
L801
C804
X801
C803
IC801
IC802
IC803
C818
C819
C807
TP801
CN802
RV801
RV802
RV803
CN805
1-620-157-
II

3 BOARD (SOLDER SIDE) no mark : CAMERA POWER SW ON mode

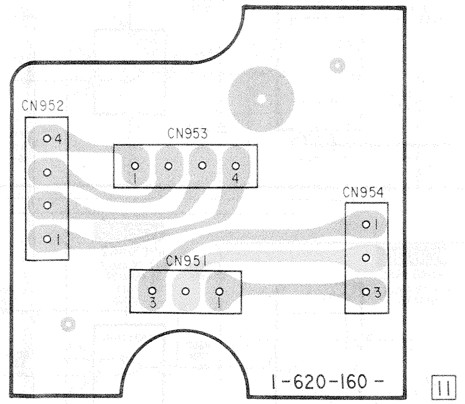

Q802
Q811
R837
R833
R821
R802 100k
R812 470
R817 1k
C811 0.01
IC804
R839 100k
R836 47k
R835 100k
R838 22k
C816 0.01
R819 100k
R818 22k
R823 100k
C802 0.01
R813 20k
C806 0.01
R809 12k
R805
R822 47k
R807 47k
R806
R808 24k
C805 0.01
R810 1k
R811 1k
R832 4.7k
Q810
Q809
Q808
R830 47k
R831 3.3k
R825 47k
Q806
Q803
Q804
R824 4.7k
Q801
R805 22k
R804 470
C808 0.1
R815 33k
R814 3.3k
R834 47k
R829 22
Q807
R828 22
R827 47k
R826 3.3k
C809 0.001
R816 3.3
C801 0.01
C813 0.01
C814 0.01
C817 0.01
Q805
1-620-157-
II
1
2
3
4
5
6
7

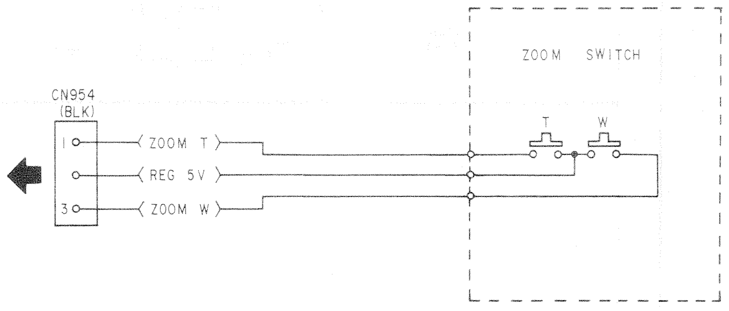
GS-2 BOARD

LI-1 BOARD


START / STOP
S921
C
D
1-620-279-
II
LITHIUM BATTERY
A
B
1-620-159-
II
S/S SW2
S/S SW1
LI GND
LI 3V
1
4
CN953(WHT)

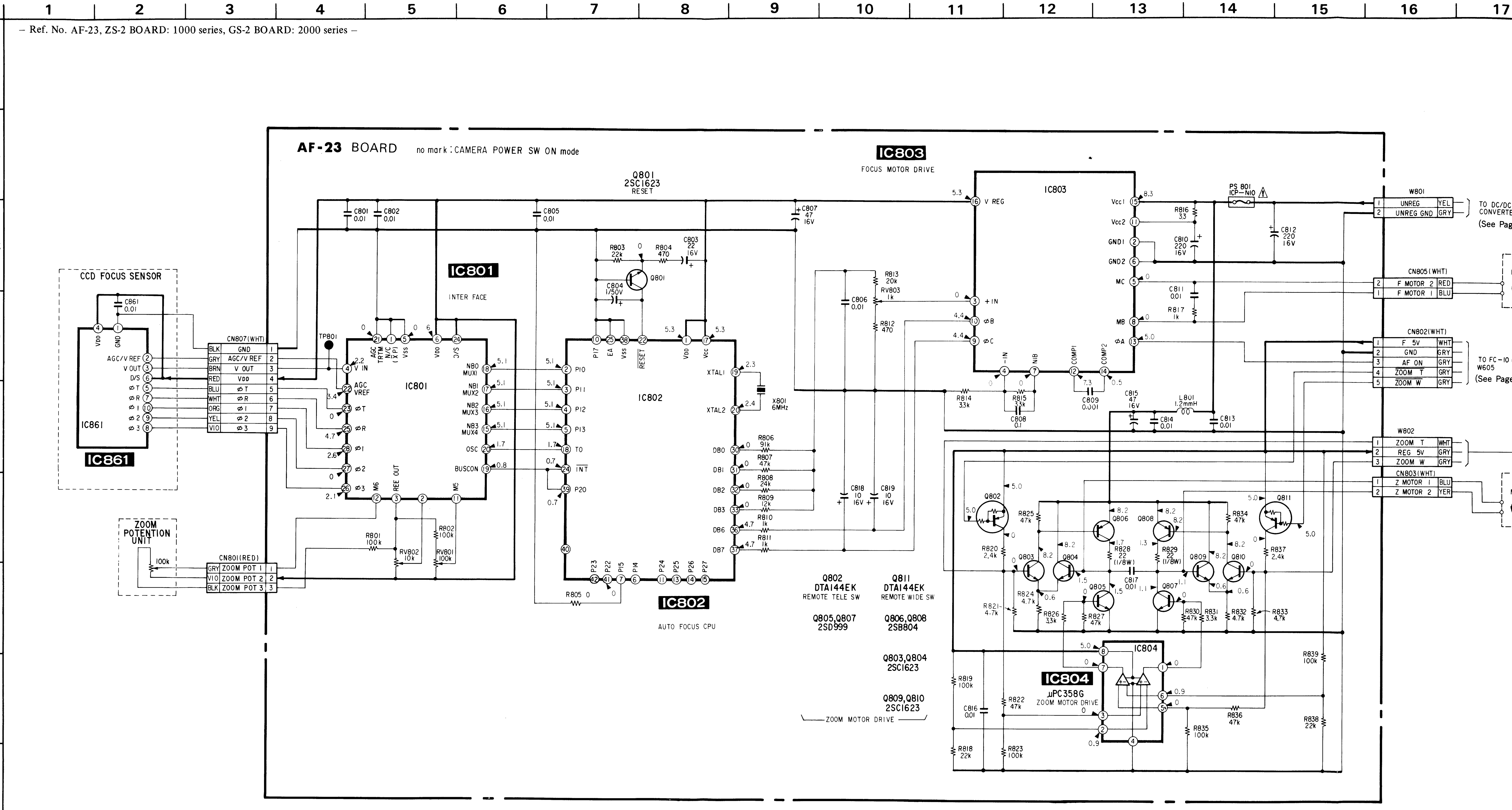
ZS-2 BOARD


CN952
4
1
CN953
1
4
CN954
1
3
CN951
3
1
1-620-160-
II

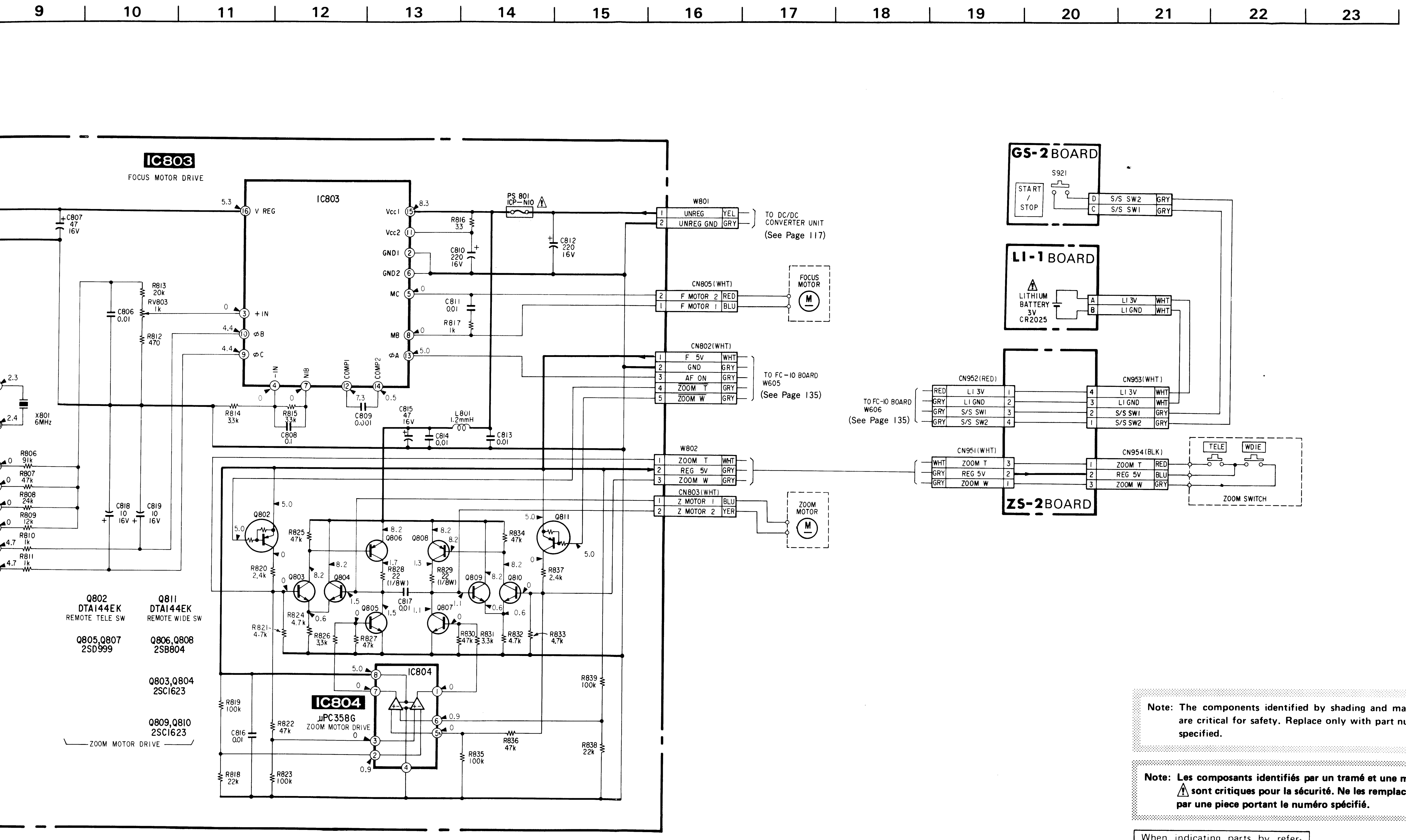

CN954 (BLK)
1
3
ZOOM T
REG 5V
ZOOM W
ZOOM SWITCH
T
W

AF-23 (AUTO FOCUS, ZOOM MOTOR DRIVE), ZS-2 (START/STOP SWITCH, ZOOM SWITCH, RELAY), LI-1 (LITHIUM BATTERY STORAGE), GS-2 (START/STOP SWITCH) SCHEMATIC DIAGRAM

– Ref. No. AF-23, ZS-2 BOARD: 1000 series, GS-2 BOARD: 2000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
AF-23 BOARD
no mark : CAMERA POWER SW ON mode
CCD FOCUS SENSOR
IC861
ZOOM POTENTION UNIT
CN807(WHT)
GND
AGC/V REF
V OUT
VDD
φT
φR
φ1
φ2
φ3
CN801(RED)
ZOOM POT 1
ZOOM POT 2
ZOOM POT 3
TP801
IC801
INTER FACE
IC802
AUTO FOCUS CPU
Q801
2SC1623
RESET
X801
6MHz
IC803
FOCUS MOTOR DRIVE
PS 801
ICP-N10
W801
UNREG
UNREG GND
TO DC/DC CONVERTE
(See Pag
CN805(WHT)
F MOTOR 2
F MOTOR 1
CN802(WHT)
F 5V
GND
AF ON
ZOOM T
ZOOM W
TO FC-10
W605
(See Page
W802
ZOOM T
REG 5V
ZOOM W
CN803(WHT)
Z MOTOR 1
Z MOTOR 2
L801
1.2mmH
Q802
DTA144EK
REMOTE TELE SW
Q811
DTA144EK
REMOTE WIDE SW
Q805,Q807
2SD999
Q806,Q808
2SB804
Q803,Q804
2SC1623
Q809,Q810
2SC1623
ZOOM MOTOR DRIVE
IC804
µPC358G
ZOOM MOTOR DRIVE

STORAGE), GS-2 (START/STOP SWITCH) SCHEMATIC DIAGRAM


9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
IC803
FOCUS MOTOR DRIVE
IC803
V REG
Vcc1
Vcc2
GND1
GND2
MC
MB
ΦA
+IN
ΦB
ΦC
-IN
NIB
COMP1
COMP2
C807 47 16V
R813 20k
RV803 1k
C806 0.01
R812 470
R814 33k
R815 33k
C808 0.1
C809 0.001
R816 33
C810 220 16V
C811 0.01
R817 1k
C812 220 16V
PS 801 ICP-N10
C815 47 16V
C814 0.01
L801 1.2mmH
C813 0.01
X801 6MHz
R806 91k
R807 47k
R808 24k
R809 12k
R810 1k
R811 1k
C818 10 16V
C819 10 16V
W801
UNREG
UNREG GND
TO DC/DC CONVERTER UNIT (See Page 117)
CN805(WHT)
F MOTOR 2
F MOTOR 1
FOCUS MOTOR
CN802(WHT)
F 5V
GND
AF ON
ZOOM T
ZOOM W
TO FC-10 BOARD W605 (See Page 135)
W802
ZOOM T
REG 5V
ZOOM W
CN803(WHT)
Z MOTOR 1
Z MOTOR 2
ZOOM MOTOR
Q802
Q803
Q804
Q805
Q806
Q807
Q808
Q809
Q810
Q811
R820 2.4k
R825 47k
R824 4.7k
R826 33k
R827 47k
R828 22 (1/8W)
R829 22 (1/8W)
C817 0.01
R830 47k
R831 3.3k
R832 4.7k
R833 4.7k
R834 47k
R837 2.4k
R821 4.7k
R839 100k
R838 22k
R819 100k
C816 0.01
R822 47k
R818 22k
R823 100k
R835 100k
R836 47k
IC804
μPC358G
ZOOM MOTOR DRIVE
Q802 DTA144EK REMOTE TELE SW
Q811 DTA144EK REMOTE WIDE SW
Q805,Q807 2SD999
Q806,Q808 2SB804
Q803,Q804 2SC1623
Q809,Q810 2SC1623
ZOOM MOTOR DRIVE
GS-2 BOARD
S921
START / STOP
S/S SW2
S/S SW1
LI-1 BOARD
LITHIUM BATTERY 3V CR2025
LI 3V
LI GND
CN952(RED)
CN953(WHT)
TO FC-10 BOARD W606 (See Page 135)
CN951(WHT)
CN954(BLK)
ZOOM T
REG 5V
ZOOM W
TELE
WDIE
ZOOM SWITCH
ZS-2 BOARD
YEL
GRY
RED
BLU
WHT
YER

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

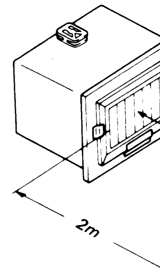
Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Note (Schematic Diagram

- Caution to be exerc
  Do not reuse the
  components.
  Caution should be ta
  capacitor is weak to
- All capacitors which
  indicated except for
  μF (p is pF).
- All resistors are in oh
  kΩ =1000Ω and M
- All variable and ad
  curve B, which defi
- ☐ : panel desig
- ☐ : adjustment
- ▬ : B+ line.
- Measuring condition
  (1) The subject is
  (2) The voltage va
  grounding.
  (The tester use

1. Connection



2. Adjust the distance
a and the Fig. b ca

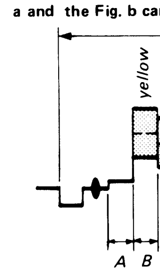


Fig. a Camera outp
TP202 (Pin

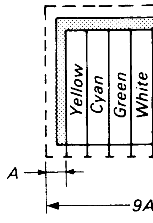
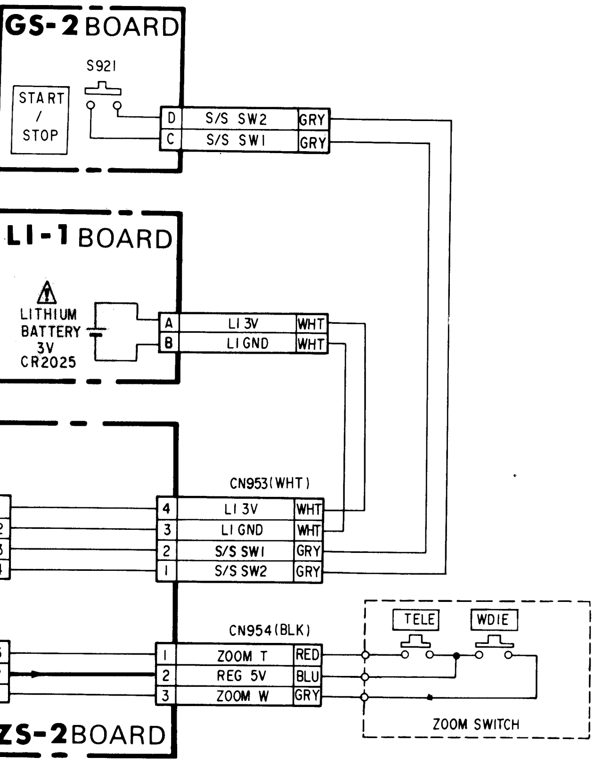

Yellow
Cyan
Green
White
A
9A

Fig. b Pic


GS-2 BOARD
S921
START / STOP
D S/S SW2 GRY
C S/S SW1 GRY
LI-1 BOARD
LITHIUM BATTERY 3V CR2025
A LI 3V WHT
B LI GND WHT
CN953 (WHT)
4 LI 3V WHT
3 LI GND WHT
2 S/S SW1 GRY
1 S/S SW2 GRY
CN954 (BLK)
1 ZOOM T RED
2 REG 5V BLU
3 ZOOM W GRY
TELE
WDIE
ZOOM SWITCH
ZS-2 BOARD

Note: **The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

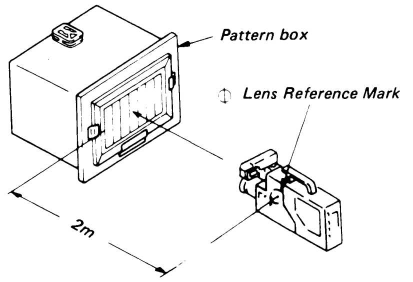
Note: **Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.**

When indicating parts by reference number, please include the board name.

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat. .
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- Measuring conditions of voltage value and waveform
  (1) The subject is color bar of pattern box.
  (2) The voltage value is a reference value between the grounding.
  (The tester used is the digital multimeter DC10MΩ)

1. Connection


Pattern box
Lens Reference Mark
2m

2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

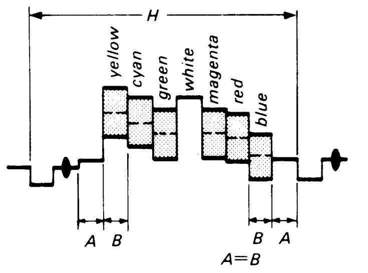

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A=B

Fig. a Camera output waveform of TP202 (Pin 3 of CN201) on VI-21 board

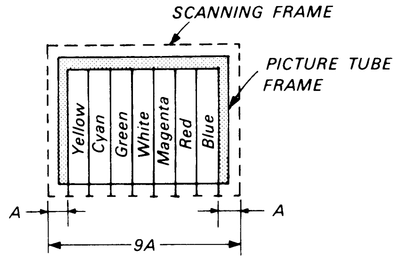
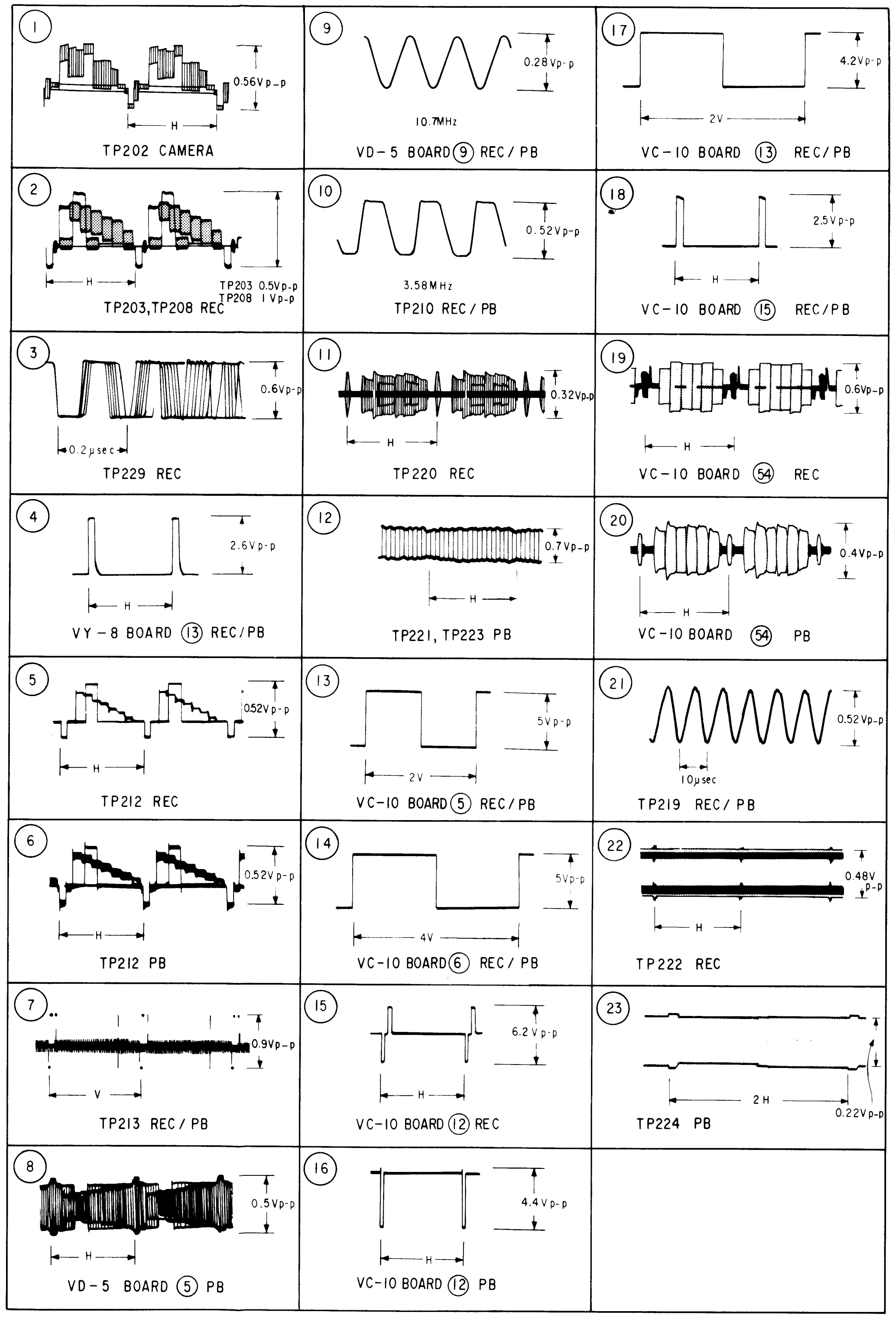
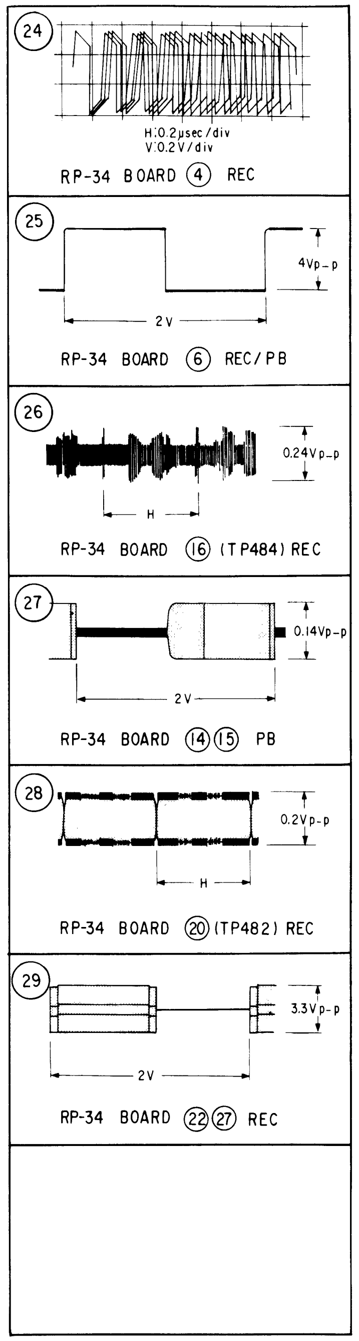

SCANNING FRAME
PICTURE TUBE FRAME
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
A
9A

Fig. b Picture of TV monitor screen

VI-21 BOARD (VIDEO)



RP-39 BOARD (VIDEO)

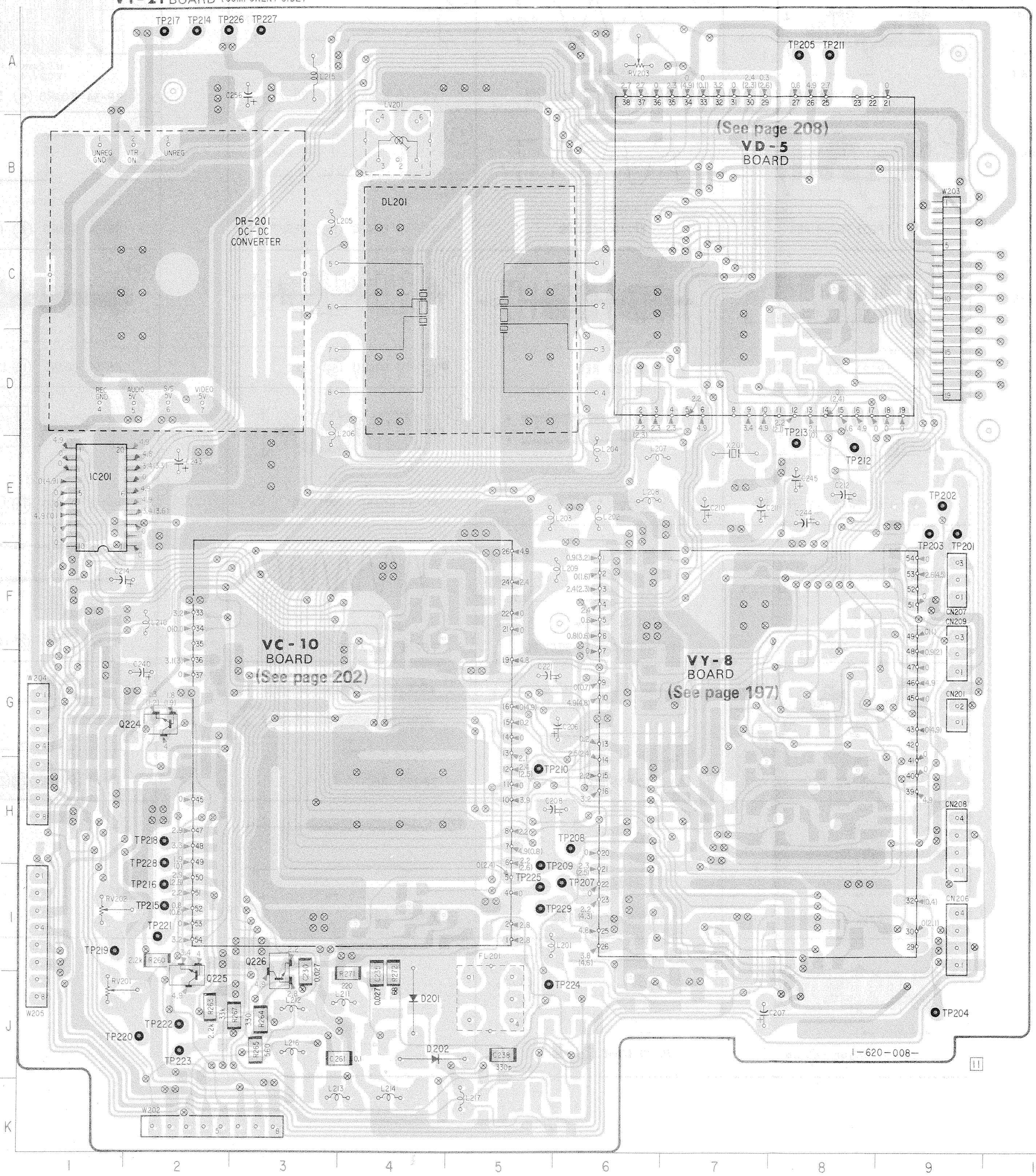


VI-21 (VIDEO SIGNAL PROCESS), RP-39 (VIDEO, AUDIO RF SIGNAL PROCESS, FLYING ERASE OSC), CC-6 (ACCESSORY INPUT/OUTPUT TERMINAL, SHARPNESS VR), SC-6 (MULTI CONNECTOR, FUSE) PRINTED WIRING BOARD

– Ref. No. VI-21, RP-39, CC-6 BOARD: 3000 series, SC-6 BOARD: 4000 series –

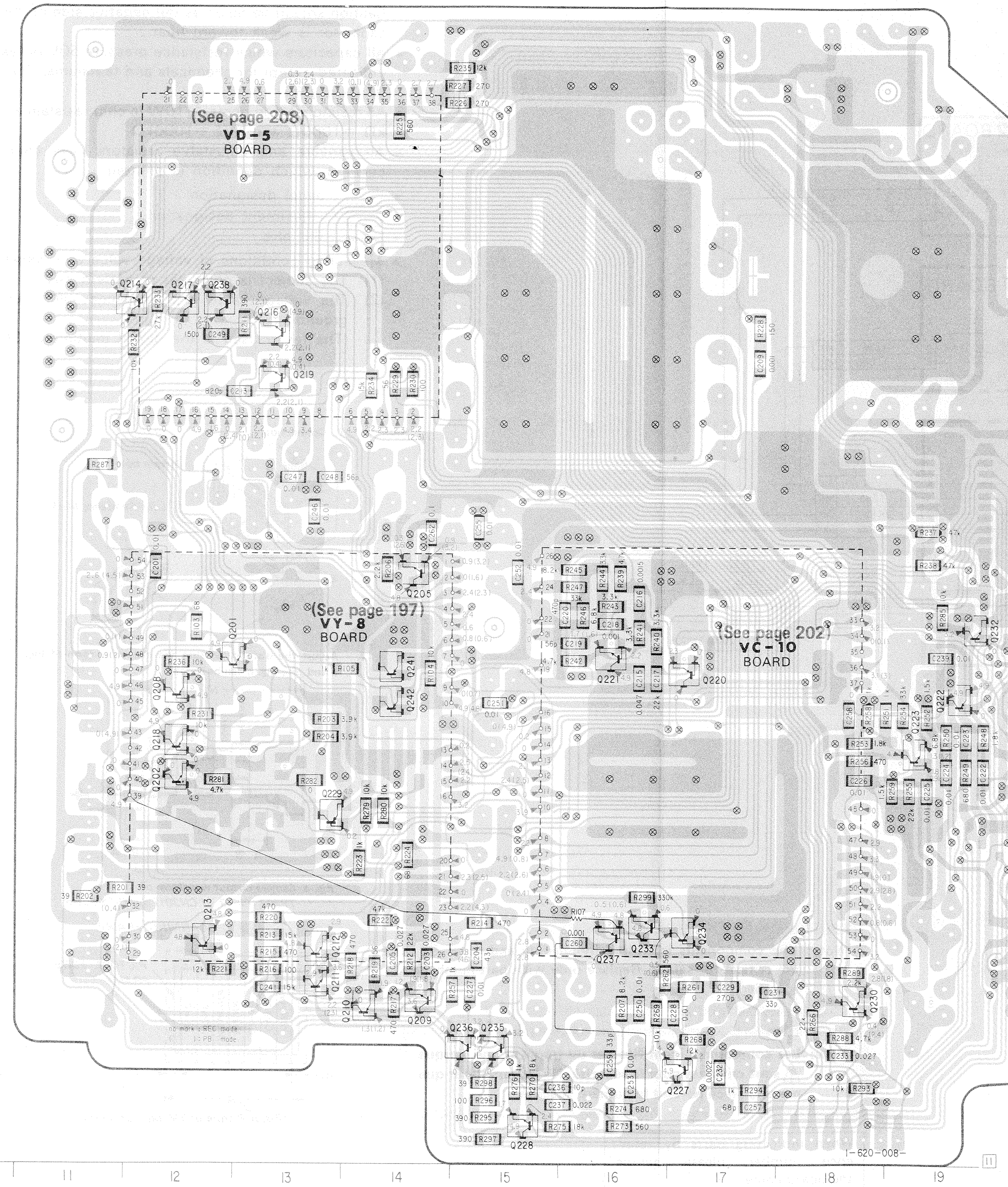
D201	J - 4
D202	J - 4
IC201	E - 1
LV201	B - 4
Q201	F - 13
Q202	H - 12
Q205	F - 14
Q208	G - 12
Q209	J - 14
Q210	J - 14
Q211	I - 13
Q212	I - 13
Q213	I - 12
Q214	C - 12
Q216	C - 13
Q217	C - 12
Q218	G - 12
Q219	D - 13
Q220	G - 17
Q221	G - 16
Q222	G - 19
Q223	G - 19
Q224	G - 2
Q225	J - 2
Q226	I - 3
Q227	J - 17
Q228	K - 15
Q229	H - 13
Q230	J - 18
Q232	F - 19
Q233	I - 16
Q234	I - 17
Q235	J - 14
Q236	J - 14
Q237	I - 16
Q238	C - 12
Q241	G - 14
Q242	G - 14
RV201	J - 1
RV202	I - 1
RV203	A - 6
TP201	E - 9
TP202	E - 9
TP203	E - 9
TP204	J - 9
TP205	A - 8
TP207	I - 6
TP208	H - 6
TP209	H - 5
TP210	H - 5
TP211	A - 8
TP212	E - 8
TP213	D - 8
TP214	A - 2
TP215	I - 2
TP216	I - 2
TP217	A - 2
TP218	H - 2
TP219	I - 1
TP220	J - 2
TP221	I - 2
TP222	J - 2
TP223	J - 2
TP224	J - 5
TP225	I - 5
TP226	A - 2
TP227	A - 3
TP228	H - 2
TP229	I - 5

VI-21 BOARD (COMPONENT SIDE)



A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
9
10
TP217 TP214 TP226 TP227
TP205 TP211
(See page 208)
VD-5
BOARD
LV201
DL201
DR-201
DC-DC
CONVERTER
IC201
TP213
TP212
TP202
TP203 TP201
VC-10
BOARD
(See page 202)
VY-8
BOARD
(See page 197)
TP210
TP206
TP209
TP225
TP207
TP229
TP224
TP218
TP228
TP216
TP215
TP221
TP219
TP222
TP220
TP223
TP204
Q224
Q225
Q226
D201
D202
RV201
RV202
RV203
W202
W203
W204
W205
1-620-008-

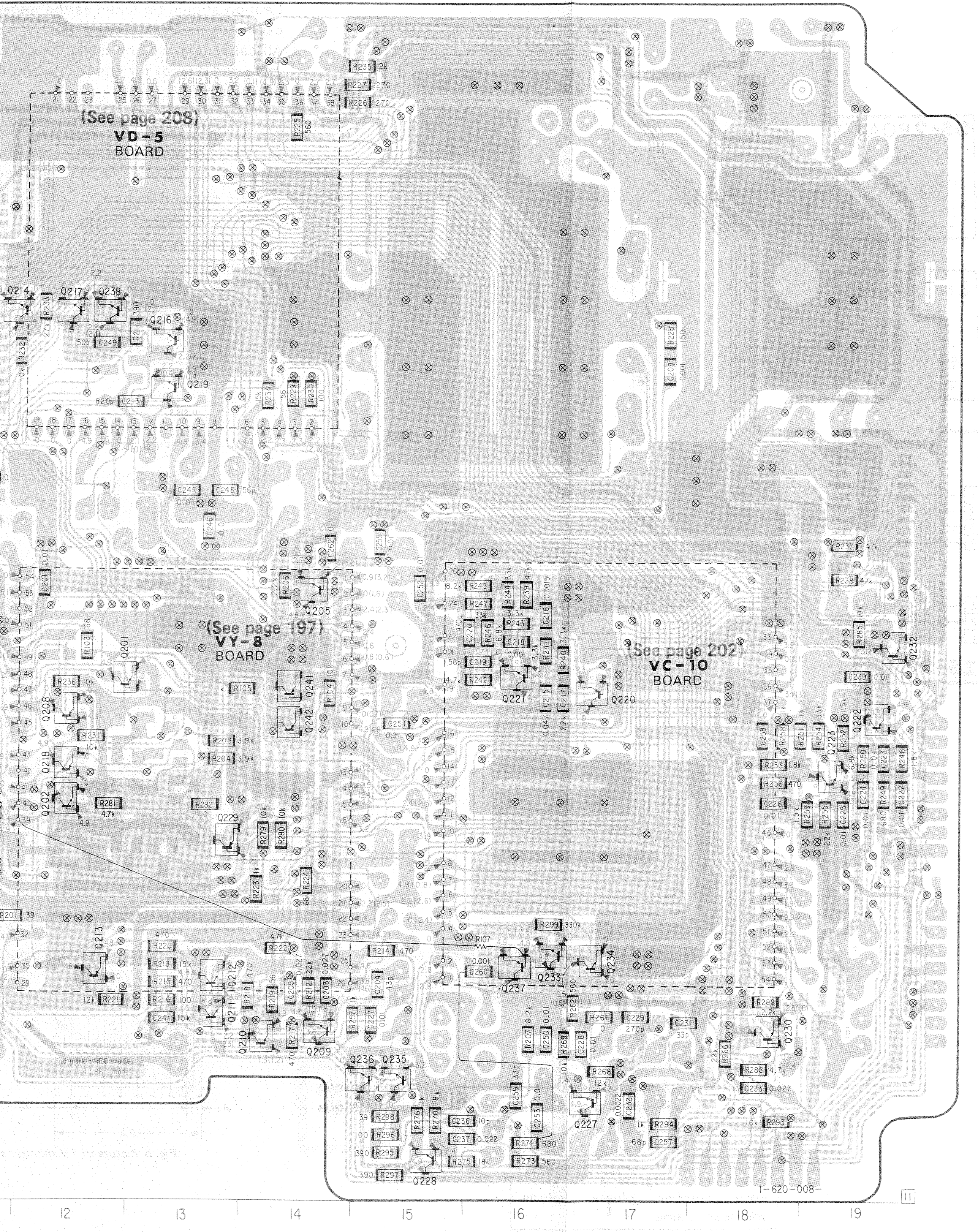
VI-21 BOARD (SOLDER SIDE)



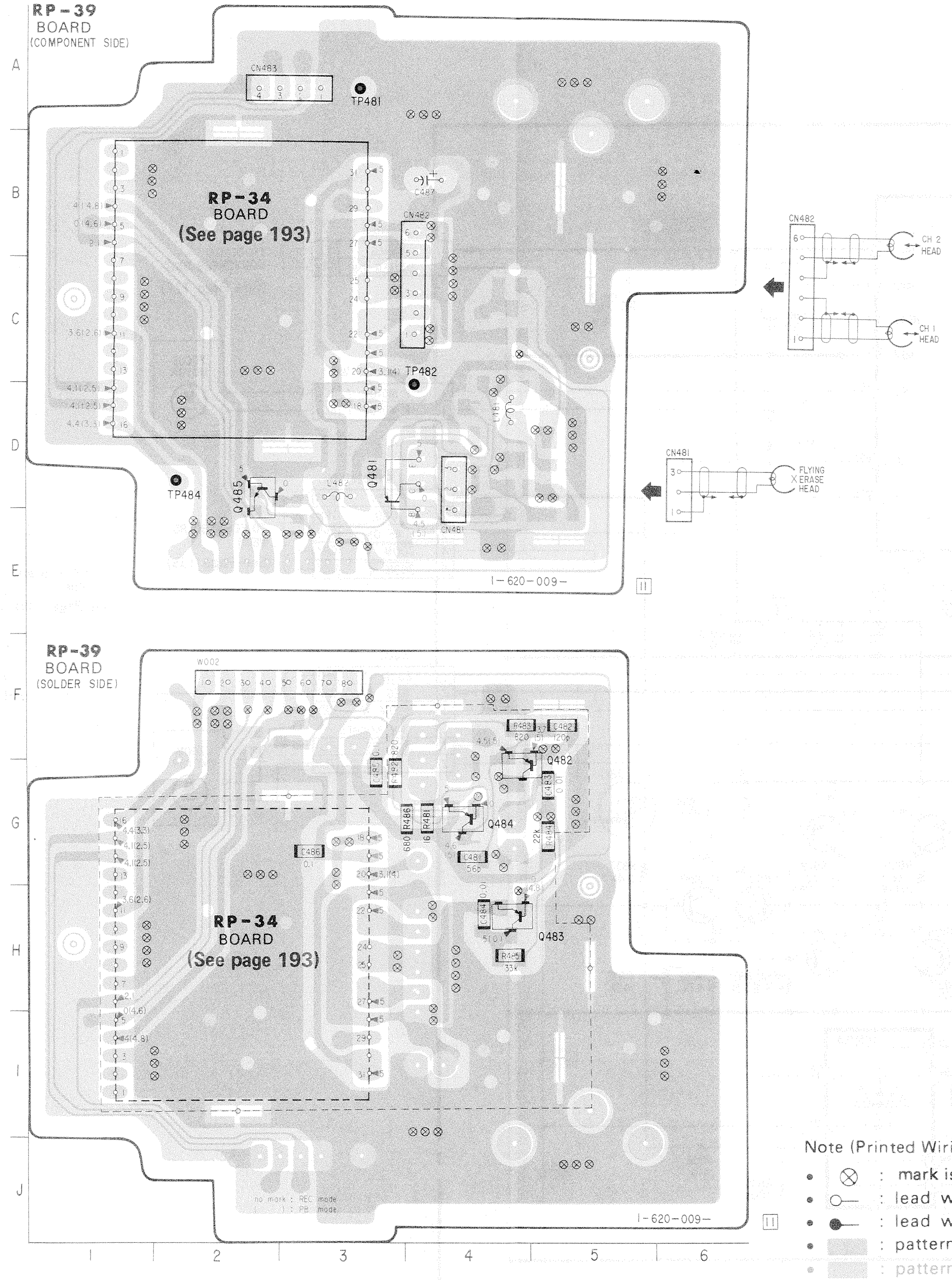
11
12
13
14
15
16
17
18
19
(See page 208)
VD-5
BOARD
(See page 197)
VY-8
BOARD
(See page 202)
VC-10
BOARD
Q214
Q217
Q238
Q216
Q219
Q205
Q201
Q208
Q218
Q202
Q241
Q242
Q229
Q213
Q212
Q211
Q210
Q209
Q236
Q235
Q228
Q221
Q220
Q237
Q233
Q234
Q227
Q222
Q223
Q232
Q230
1-620-008-

L, SHARPNESS VR), SC-6 (MULTI CONNECTOR, FUSE) PRINTED WIRING BOARD

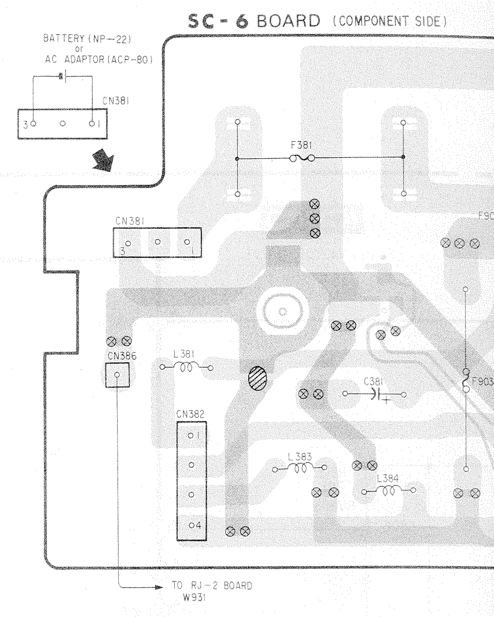
RD (SOLDER SIDE)


(See page 208)
VD-5
BOARD
(See page 197)
VY-8
BOARD
(See page 202)
VC-10
BOARD
1-620-008-
12
13
14
15
16
17
18
19

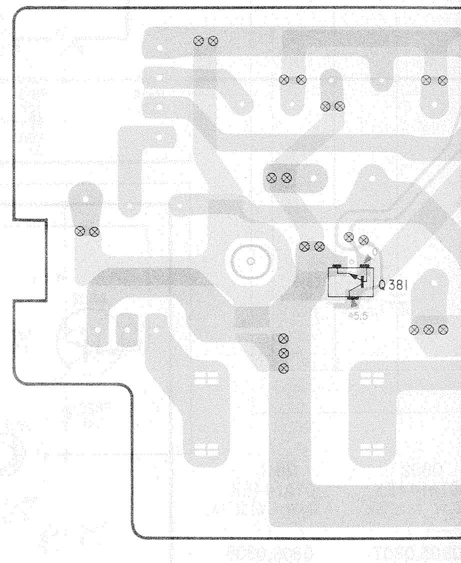
Q481	D-3
Q482	G-4
Q483	H-4
Q484	G-4
Q485	D-2
TP481	A-3
TP482	C-4
TP484	D-2


RP-39
BOARD
(COMPONENT SIDE)
RP-34
BOARD
(See page 193)
TP481
TP482
TP484
Q481
Q485
CN483
CN482
CN481
CH 2 HEAD
CH 1 HEAD
FLYING ERASE HEAD
1-620-009-
RP-39
BOARD
(SOLDER SIDE)
RP-34
BOARD
(See page 193)
Q482
Q483
Q484
W002
1-620-009-
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6

SC-6 BOARD (COMPONENT SIDE)

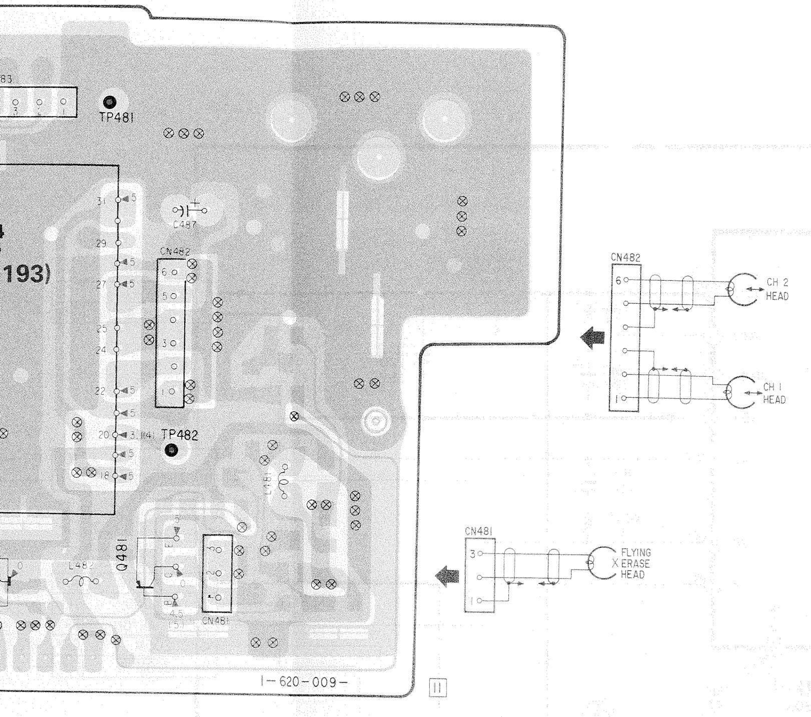

BATTERY (NP-22) or AC ADAPTOR (ACP-80)
CN381
F381
CN386
L381
C381
CN382
L383
L384
TO RJ-2 BOARD W931

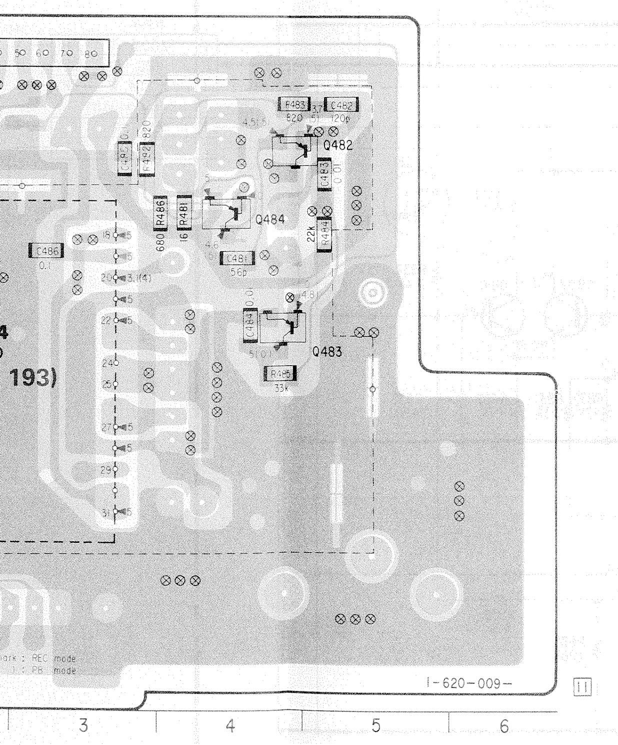
SC-6 BOARD (SOLDER SIDE)



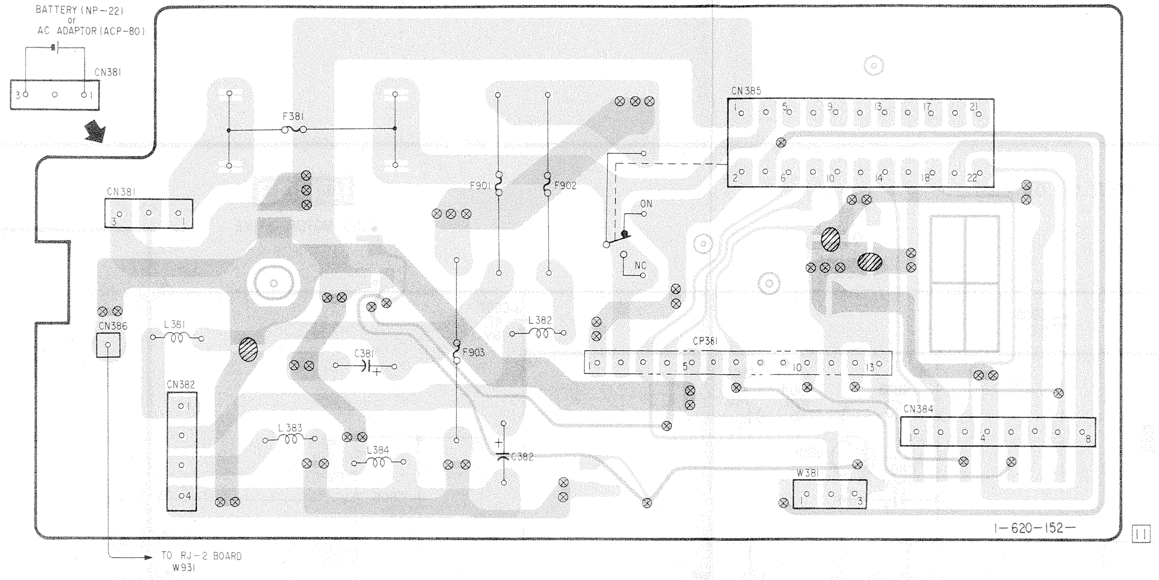
Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the **component side.**
- ●— : lead wire attached to the **soldering side.**
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transitor (VI-21: Q201, 202, 208, 213, 214, 216, 217, 218, 219, 222, 229, 234, 235, 236, 237, 238, SC-6: Q384, CC-6: Q901, 904, 905) transistor with resistors.
  Refer to the VI-21, SC-6, CC-6 boards schematic diagram for digital transistor.

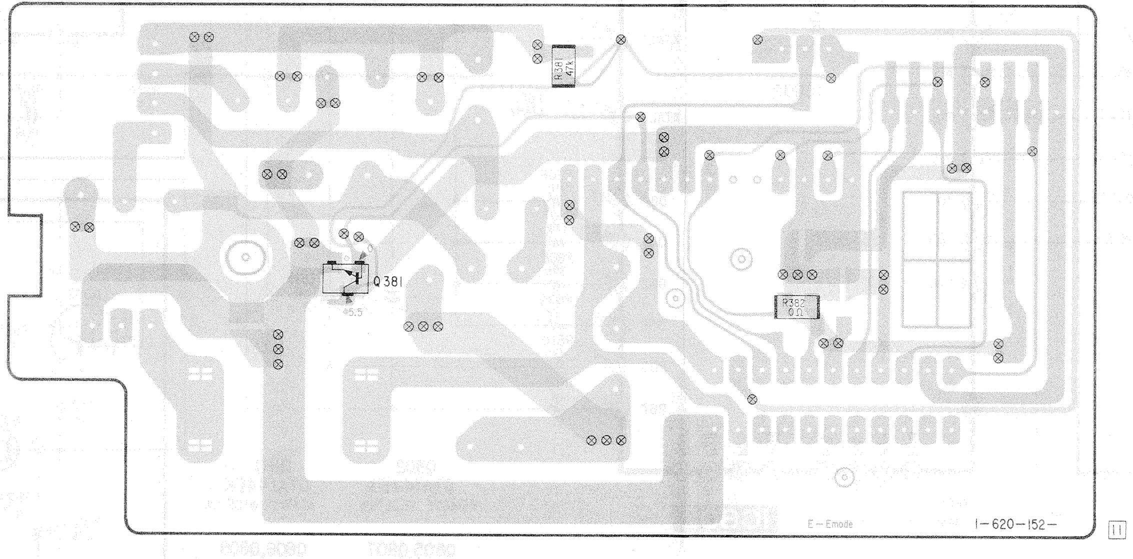

TP481
TP482
CN482
CN481
Q481
L481
193)
CN482
CH 2 HEAD
CH 1 HEAD
CN481
FLYING ERASE HEAD
1-620-009-


Q482
Q484
Q483
193)
1-620-009-
3
4
5
6

SC - 6 BOARD (COMPONENT SIDE)

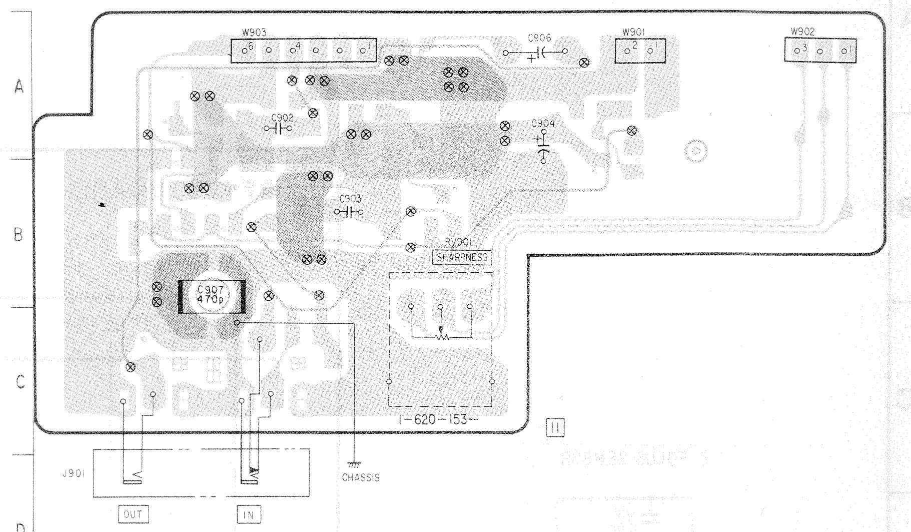

BATTERY (NP-22) or AC ADAPTOR (ACP-80)
CN381
CN385
F381
F901
F902
F903
ON
NC
CN386
L381
L382
L383
L384
C381
C382
CP381
CN382
CN384
W381
1-620-152-
TO RJ-2 BOARD W931

SC - 6 BOARD (SOLDER SIDE)

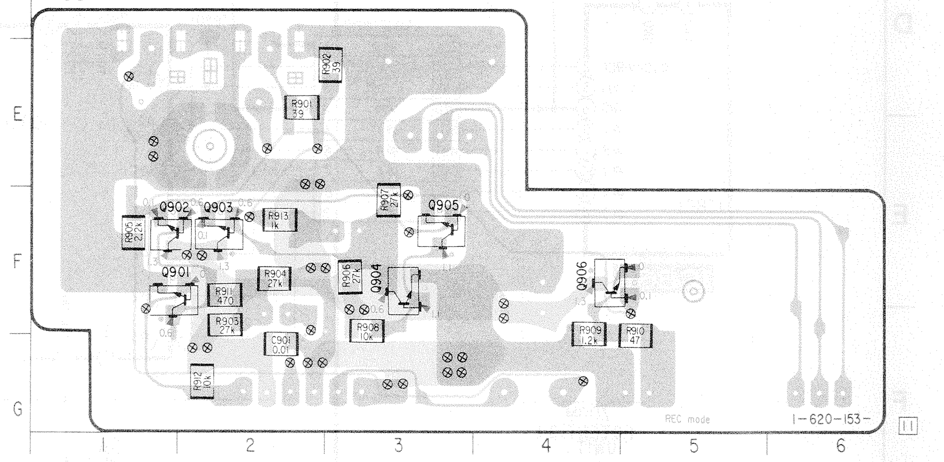

R381
Q381
R382
E-Emode
1-620-152-

Q901	F-1
Q902	F-1
Q903	F-2
Q904	F-3
Q905	F-3
RV901	C-3

CC - 6 BOARD (COMPONENT SIDE)


A
B
C
D
W903
C906
W901
W902
C902
C904
C903
RV901
SHARPNESS
C907 470p
1-620-153-
J901
OUT
IN
CHASSIS

CC - 6 BOARD (SOLDER SIDE)


E
F
G
R902
R901
Q902
Q903
Q905
Q901
Q904
Q906
R913
R904
R903
R908
R909
R910
C901
REC mode
1-620-153-
1
2
3
4
5
6

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (VI-21: Q201, 202, 208, 213, 214, 216, 217, 218, 219, 222, 229, 234, 235, 236, 237, 238, SC-6: Q384, CC-6: Q901, 904, 905) transistor with resistors.
  Refer to the VI-21, SC-6, CC-6 boards schematic diagram for digital transistor.

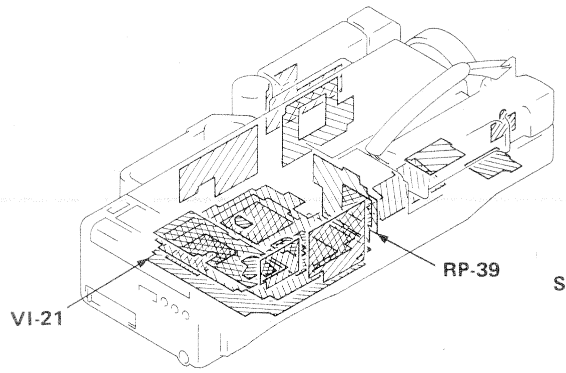
Note

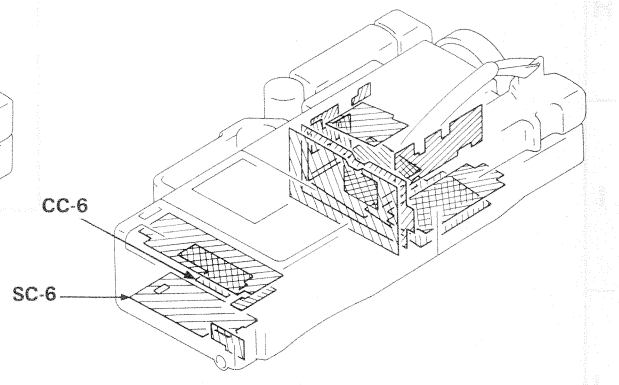
Soldering side:	Parts on the soldering side being seen from the soldering are stated.
Component side:	Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

* Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).

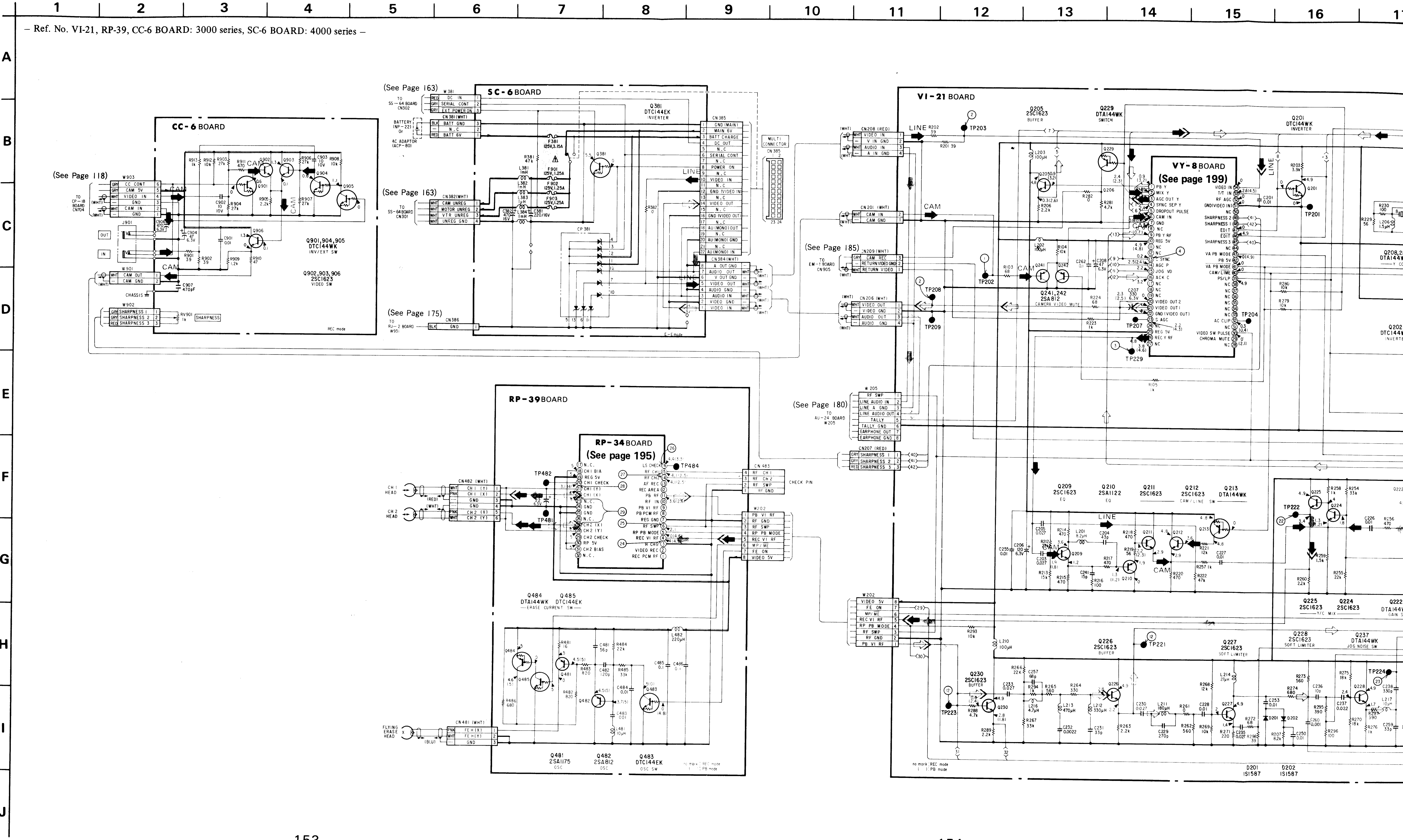
* Pattern being seen in the state of the rear surface side is indicated in green pattern.





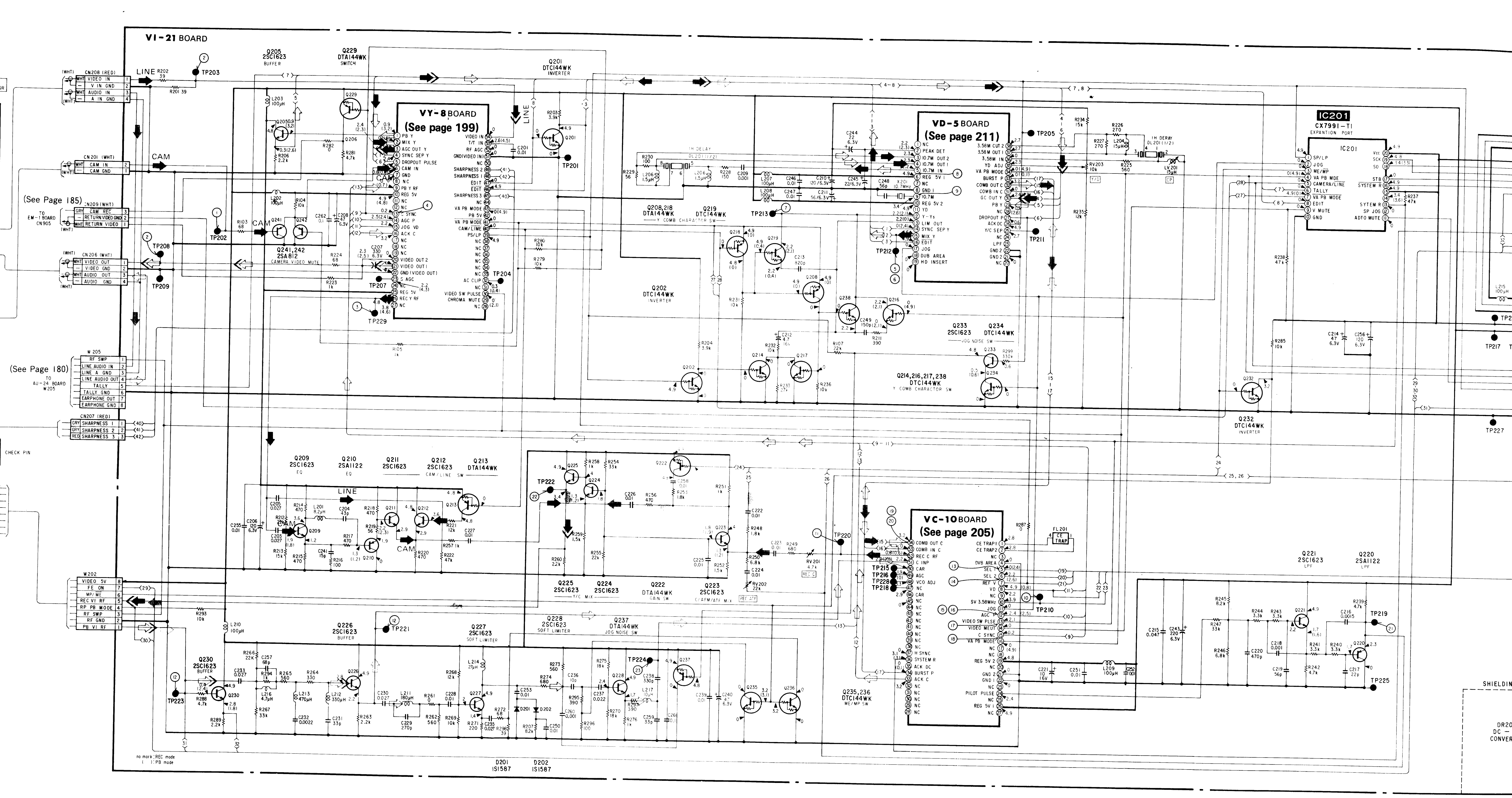
VI-21 (VIDEO SIGNAL PROCESS), RP-39 (VIDEO, AUDIO RF SIGNAL PROCESS, FLYING ERASE OSC), CC-6 (ACCESSORY INPUT/OUTPUT TERMINAL, SHARPNESS VR), SC-6 (MULTI CONNECTOR, FUSE) SCHEMATIC DIAGRAM

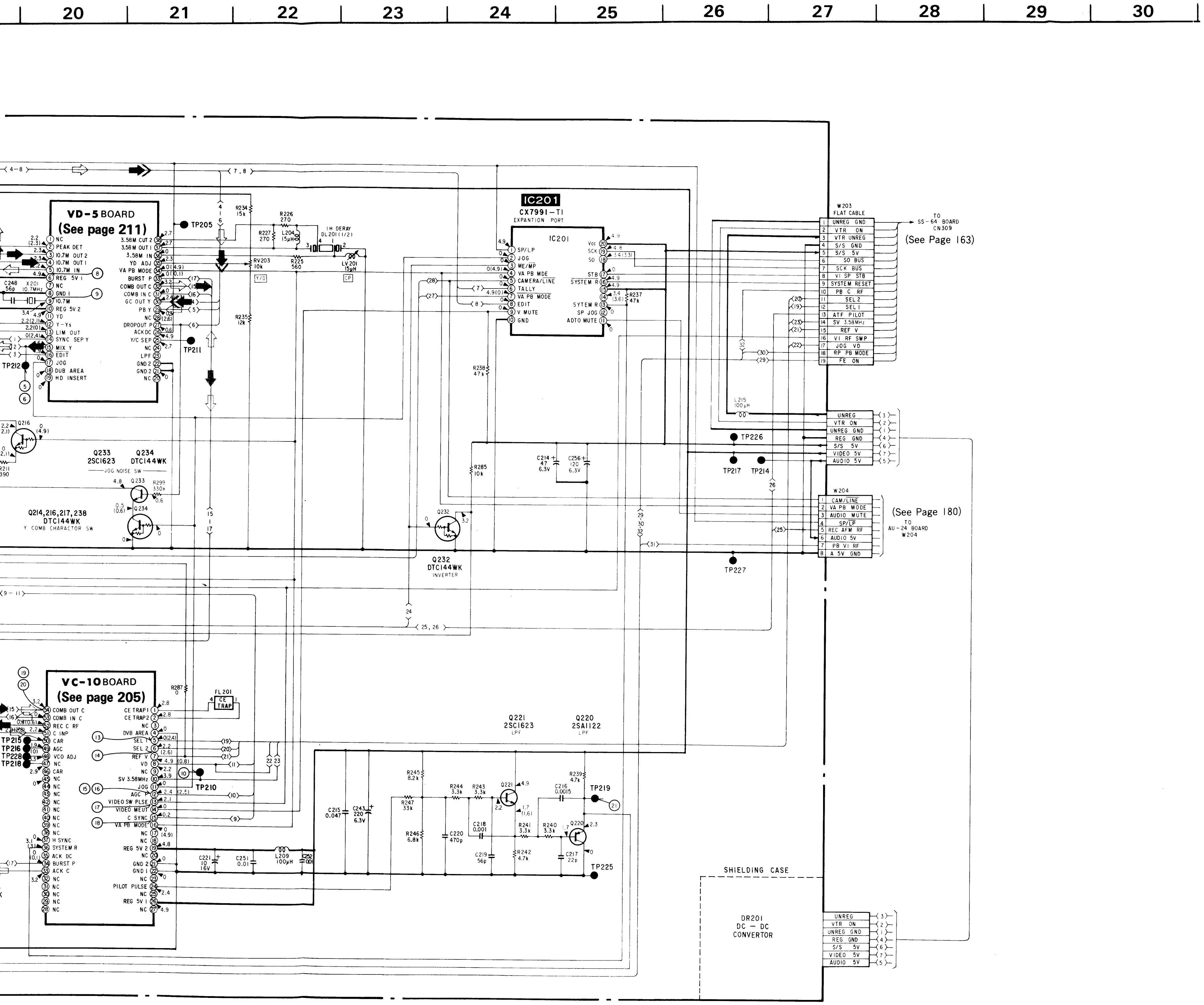
– Ref. No. VI-21, RP-39, CC-6 BOARD: 3000 series, SC-6 BOARD: 4000 series –



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
CC-6 BOARD
(See Page 118)
TO CP-18 BOARD CN704
W903
CC CONT
CAM 5V
VIDEO IN
GND
CAM IN
GND
J901
OUT
IN
W901
CAM OUT
CAM GND
CHASSIS
W902
SHARPNESS 1
SHARPNESS 2
SHARPNESS 3
RV901 1k
SHARPNESS
Q901,904,905 DTC144WK INV/EXT SW
Q902,903,906 2SC1623 VIDEO SW
REC mode
(See Page 163)
TO SS-64 BOARD CN302
BATTERY (NP-22) Or AC ADAPTOR (ACP-80)
W381
DC IN
SERIAL CONT
EXT POWER ON
CN381(WHT)
BATT GND
N.C
BATT 6V
SC-6 BOARD
Q381 DTC144EK INVERTER
F381 125V,3.15A
F901 125V,1.25A
F902 125V,1.25A
F903 125V,1.25A
(See Page 163)
TO SS-64 BOARD CN301
CN382(WHT)
CAM UNREG
MOTOR UNREG
VTR UNREG
UNREG GND
CP381
(See Page 175)
TO RJ-2 BOARD W931
CN386
GND
CN385
GND (MAIN)
MAIN 6V
BATT CHARGE
DC OUT
N.C
SERIAL CONT
N.C
POWER ON
N.C
VIDEO IN
N.C
GND (VIDEO IN)
N.C
VIDEO OUT
N.C
GND (VIDEO OUT)
N.C
AU(MONO)OUT
N.C
AU(MONO)GND
N.C
AU(MONO) IN
CN384(WHT)
A OUT GND
AUDIO OUT
V OUT GND
VIDEO OUT
AUDIO GND
AUDIO IN
VIDEO GND
VIDEO IN
MULTI CONNECTOR CN385
E-E mode
RP-39 BOARD
RP-34 BOARD
(See page 195)
TP482
TP481
TP484
CH 1 HEAD
CH 2 HEAD
CN482 (WHT)
CH 1 (Y)
CH 1 (X)
GND
GND
CH 2 (X)
CH 2 (Y)
CN483
RF CH 1
RF CH 2
RF SWP
RF GND
CHECK PIN
W202
PB VI RF
RF GND
RF SWP
RP PB MODE
REC VI RF
MP/ME
FE ON
VIDEO 5V
Q484 DTA144WK
Q485 DTC144EK
ERASE CURRENT SW
FLYING ERASE HEAD
CN481 (WHT)
FE H (X)
FE H (Y)
GND
Q481 2SA1175 OSC
Q482 2SA812 OSC
Q483 DTC144EK OSC SW
no mark : REC mode
( ) : PB mode
VI-21 BOARD
VY-8 BOARD
(See page 199)
LINE
CAM
CN208 (RED)
VIDEO IN
V IN GND
AUDIO IN
A IN GND
TP203
Q205 2SC1623 BUFFER
Q229 DTA144WK SWITCH
Q201 DTC144WK INVERTER
TP201
CN201 (WHT)
CAM IN
CAM GND
(See Page 185)
TO EM-1 BOARD CN905
CN209 (WHT)
CAM REC
RETURN VIDEO GND
RETURN VIDEO
TP202
Q241,242 2SA812 CAMERA VIDEO MUTE
TP208
TP209
CN206 (WHT)
VIDEO OUT
VIDEO GND
AUDIO OUT
AUDIO GND
TP207
TP204
TP229
(See Page 180)
TO AU-24 BOARD W205
W205
RF SWP
LINE AUDIO IN
LINE A GND
LINE AUDIO OUT
TALLY
TALLY GND
EARPHONE OUT
EARPHONE GND
CN207 (RED)
SHARPNESS 1
SHARPNESS 2
SHARPNESS 3
Q209 2SC1623 EQ
Q210 2SA1122 EQ
Q211 2SC1623
Q212 2SC1623
Q213 DTA144WK CAM/LINE SW
TP222
Q225 2SC1623
Q224 2SC1623 Y/C MIX
Q222 DTA144W GAIN S
W202
VIDEO 5V
FE ON
MP/ME
REC VI RF
RP PB MODE
RF SWP
RF GND
PB VI RF
Q230 2SC1623 BUFFER
TP223
Q226 2SC1623 BUFFER
TP221
Q227 2SC1623 SOFT LIMITER
Q228 2SC1623 SOFT LIMITER
Q237 DTA144WK JOG NOISE SW
TP224
D201 1S1587
D202 1S1587
Q208,2 DTA144W
Q202 DTC144W INVERT

MINAL, SHARPNESS VR), SC-6 (MULTI CONNECTOR, FUSE) SCHEMATIC DIAGRAM


VI-21 BOARD
VY-8 BOARD (See page 199)
VD-5 BOARD (See page 211)
VC-10 BOARD (See page 205)
IC201 CX7991-T1 EXPANTION PORT
(See Page 185) TO EM-1 BOARD CN905
(See Page 180) TO AU-24 BOARD W205
CN208 (RED)
CN201 (WHT)
CN209 (WHT)
CN206 (WHT)
CN207 (RED)
W205
W202
CHECK PIN
LINE
CAM
Q205 2SC1623 BUFFER
Q229 DTA144WK SWITCH
Q201 DTC144WK INVERTER
Q241,242 2SA812 CAMERA VIDEO MUTE
Q208,218 DTA144WK
Q219 DTC144WK Y COMB CHARACTOR SW
Q202 DTC144WK INVERTER
Q233 2SC1623
Q234 DTC144WK JOG NOISE SW
Q214,216,217,238 DTC144WK Y COMB CHARACTOR SW
Q232 DTC144WK INVERTER
Q209 2SC1623 EQ
Q210 2SA1122 EQ
Q211 2SC1623
Q212 2SC1623
Q213 DTA144WK CAM/LINE SW
Q225 2SC1623
Q224 2SC1623 Y/C MIX
Q222 DTA144WK GAIN SW
Q223 2SC1623 C/AFM/ATF MIX
Q221 2SC1623 LPF
Q220 2SA1122 LPF
Q230 2SC1623 BUFFER
Q226 2SC1623 BUFFER
Q227 2SC1623 SOFT LIMITER
Q228 2SC1623 SOFT LIMITER
Q237 DTA144WK JOG NOISE SW
Q235,236 DTC144WK ME/MP SW
D201 1S1587
D202 1S1587
FL201 CE TRAP
DL201 1H DELAY
TP201 TP202 TP203 TP204 TP205 TP207 TP208 TP209 TP210 TP211 TP212 TP213 TP215 TP216 TP217 TP218 TP219 TP220 TP221 TP222 TP223 TP224 TP225 TP227 TP228 TP229
no mark: REC mode
( ): PB mode
SHIELDING
DR20 DC - CONVER


20 21 22 23 24 25 26 27 28 29 30
VD-5 BOARD
(See page 211)
VC-10 BOARD
(See page 205)
IC201
CX7991-T1
EXPANTION PORT
W203
FLAT CABLE
TO SS-64 BOARD CN309
(See Page 163)
W204
(See Page 180)
TO AU-24 BOARD W204
Q233 2SC1623
Q234 DTC144WK
Q214,216,217,238 DTC144WK
Y COMB CHARACTOR SW
Q232 DTC144WK
INVERTER
Q221 2SC1623 LPF
Q220 2SA1122 LPF
SHIELDING CASE
DR201
DC − DC
CONVERTOR
TP205
TP211
TP212
TP210
TP215
TP216
TP228
TP218
TP219
TP225
TP226
TP217
TP214
TP227
FL201
CE TRAP
1H DERAY DL201 (1/2)
UNREG GND
VTR ON
VTR UNREG
S/S GND
S/S 5V
SO BUS
SCK BUS
VI SP STB
SYSTEM RESET
PB C RF
SEL 2
SEL 1
ATF PILOT
SV 3.58MHz
REF V
VI RF SWP
JOG VD
RP PB MODE
FE ON
UNREG GND
REG GND
VIDEO 5V
AUDIO 5V
CAM/LINE
VA PB MODE
AUDIO MUTE
SP/LP
REC AFM RF
PB VI RF
A 5V GND

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- *All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10MΩ)

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

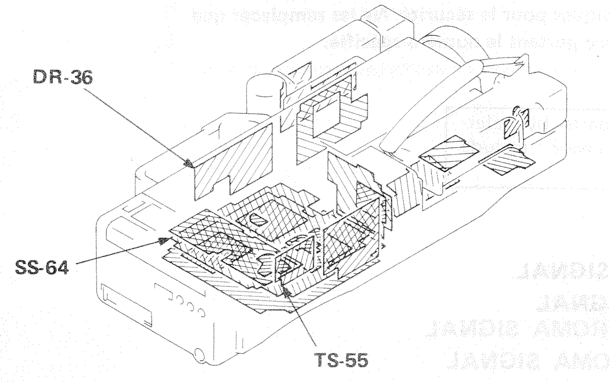
- **Signal path**
  - ➡ :REC Y SIGNAL
  - ⇨ :PB Y SIGNAL
  - ➡ :REC CHROMA SIGNAL
  - ⇨ :PB CHROMA SIGNAL
  - ➡▷ :REC Y & CHROMA SIGNAL
  - ⇨▷ :PB Y & CHROMA SIGNAL

Note (Printed Wiring Board):

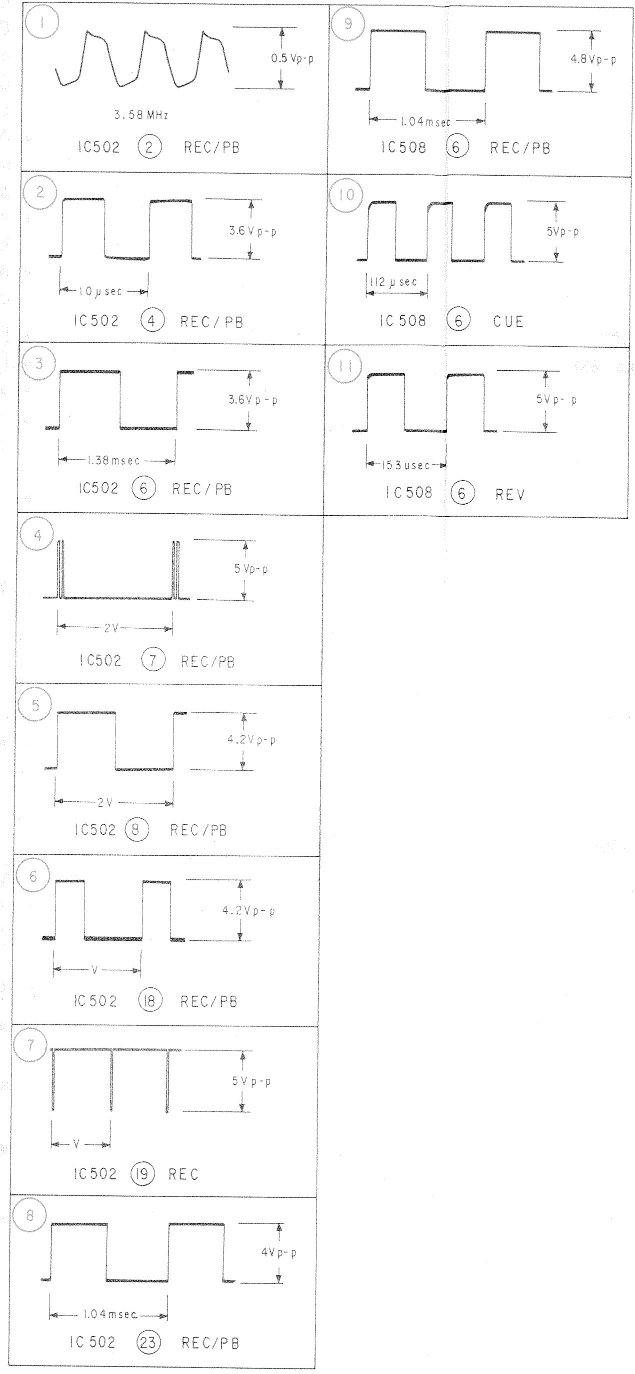
- ⊗ : mark is through hole.
- ○— : lead wire attached to the **component side.**
- ●— : lead wire attached to the **soldering side.**
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.

- Digital transistor (SS-64: Q301, 302, 303, 304, 305, 306, 308, 310, 312, 314, 318, 319, 320, 321, 324, 325, 329, 331, 332, 333, 502, 503, 508, 510, 511, 512, 513, 515, 523, 524, 525, 657, DR-36: Q502) transistor with resistors.
  Refer to the SS-64, DR-36 boards schematic diagram for digital transistor.

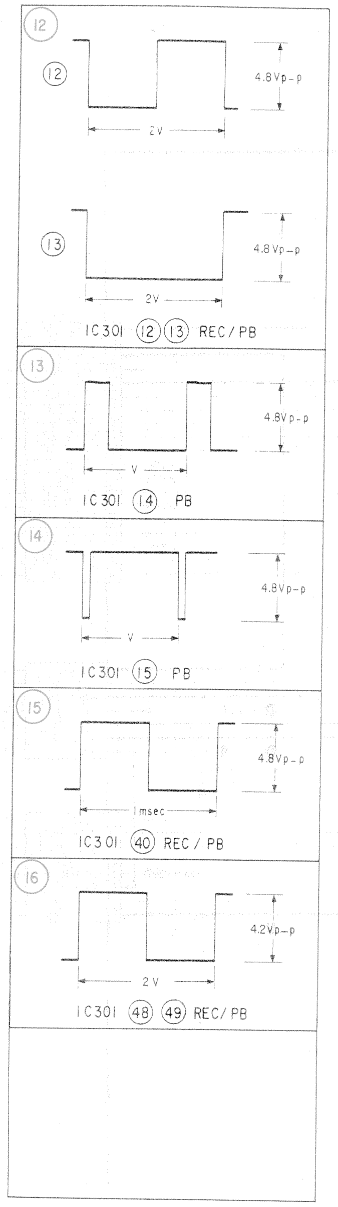
> **Note**
>
> **Soldering side:** Parts on the soldering side being seen from the soldering are stated.
>
> **Component side:** Parts on the component side being seen from the component are stated.
>
> Regarding color indication of patterns
>
> * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
>
> * Pattern being seen in the state of the rear surface side is indicated in green pattern.


DR-36
SS-64
TS-55

SS-64 BOARD (SERVO)



SS-64 BOARD (MECHANISM CONTROL)

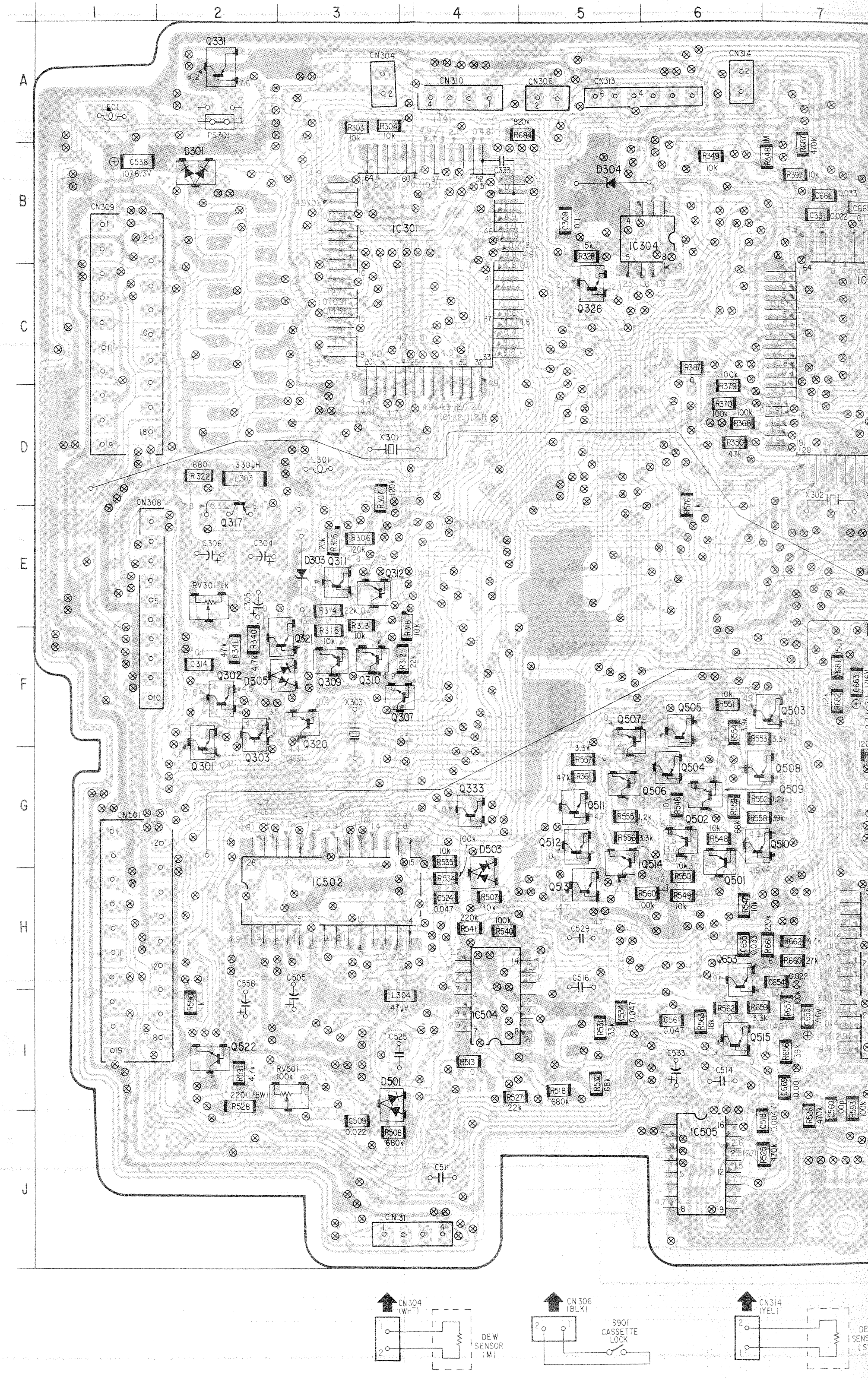


SS-64 (SYSTEM CONTROL/SERVO), DR-36 (DRUM/CAPSTAN MOTOR DRIVE, TAPE END SENSO

– Ref. No. SS-64 BOARD: 5000 series, DR-36 BOARD: 6000 series, TS-55 BOARD: 7000 series –

D301	B - 2
D303	E - 3
D304	B - 5
D305	F - 3
D501	I - 3
D503	H - 4
D505	I - 18
D651	F - 12
IC301	B - 4
IC302	C - 7
IC303	F - 18
IC304	B - 6
IC305	E - 9
IC306	F - 11
IC307	A - 13
IC501	J - 13
IC502	H - 3
IC504	I - 4
IC505	J - 6
IC506	C - 9
IC507	B - 9
IC508	F - 14
IC509	I - 8
IC651	F - 8
Q301	G - 2
Q302	F - 2
Q303	G - 2
Q304	B - 16
Q305	F - 19
Q306	H - 18
Q307	F - 4
Q308	F - 16
Q309	F - 3
Q310	F - 3
Q311	E - 3
Q312	E - 3
Q313	F - 17
Q314	E - 17
Q315	E - 18
Q316	E - 19
Q317	E - 2
Q318	E - 11
Q319	C - 19
Q320	F - 3
Q321	F - 3
Q322	B - 14
Q323	D - 12
Q324	A - 15
Q325	A - 14
Q326	C - 5
Q329	A - 18
Q331	A - 2
Q332	G - 16
Q333	G - 4
Q334	H - 13
Q501	G - 6
Q502	G - 6
Q503	F - 7
Q504	G - 6
Q505	F - 6
Q506	G - 5
Q507	F - 5
Q508	G - 7
Q509	G - 6
Q510	G - 7
Q511	G - 5
Q512	G - 5
Q513	H - 5
Q514	H - 5
Q515	I - 6
Q516	H - 17
Q517	G - 18
Q518	H - 17
Q519	H - 18
Q520	J - 18
Q521	I - 18
Q522	I - 2
Q523	I - 18
Q524	J - 17
Q525	J - 17
Q651	I - 13
Q652	I - 14
Q653	H - 6
Q654	F - 9
Q655	F - 13
Q656	G - 12
Q657	G - 8
RV301	E - 2
RV501	I - 3
RV502	H - 9

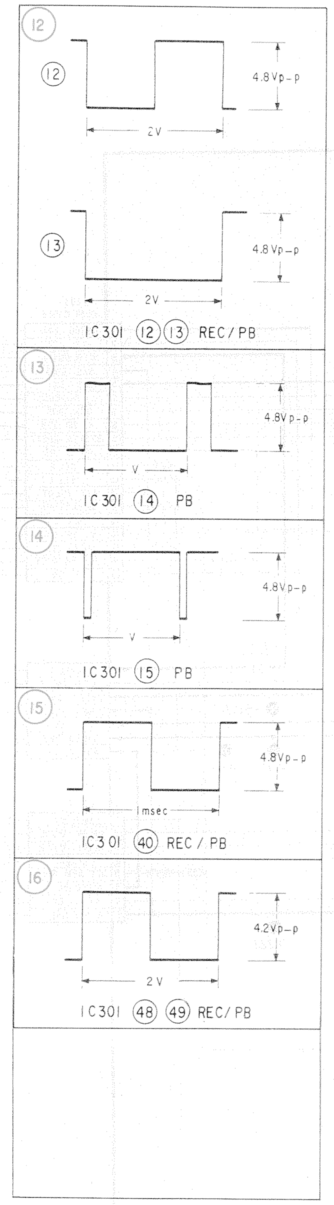
SS-64 BOARD (COMPONENT SIDE)


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
Q331
CN304
CN310
CN306
CN313
CN314
Q301
D304
IC301
IC304
Q326
CN309
CN308
Q317
RV301
Q303
Q320
Q333
CN501
IC502
Q522
RV501
D501
IC504
IC505
L304
CN311
CN304 (WHT)
DEW SENSOR (M)
CN306 (BLK)
S901 CASSETTE LOCK
CN314 (YEL)

SS-64 (SYSTEM CONTROL/SERVO), DR-36 (DRUM/CAPSTAN MOTOR DRIVE, TAPE END SENSOR), TS-55 (TAPE TOP SENSOR) PRINTED WIRING BOARD

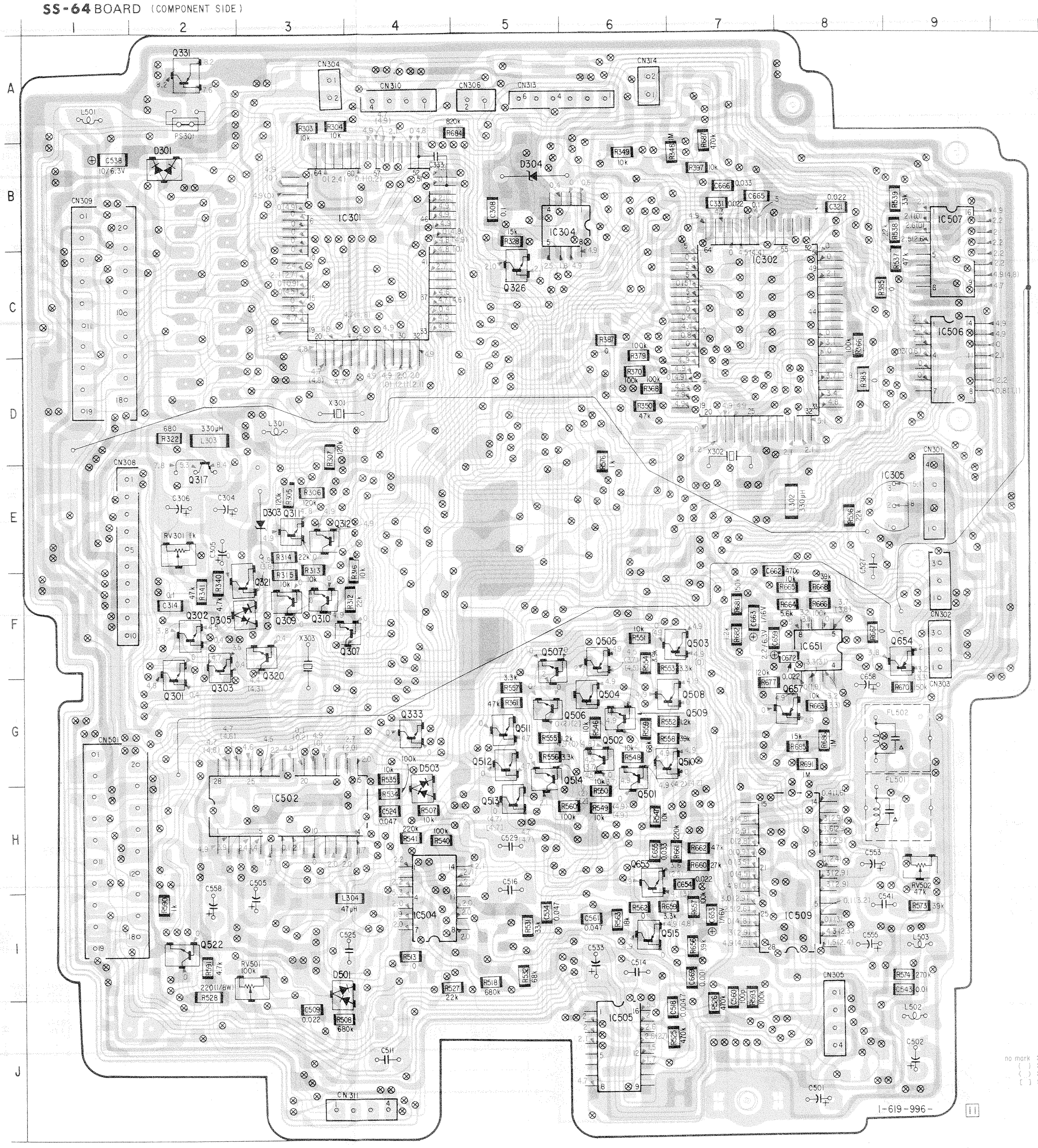
– Ref. No. SS-64 BOARD: 5000 series, DR-36 BOARD: 6000 series, TS-55 BOARD: 7000 series –

SS-64 BOARD (MECHANISM CONTROL)



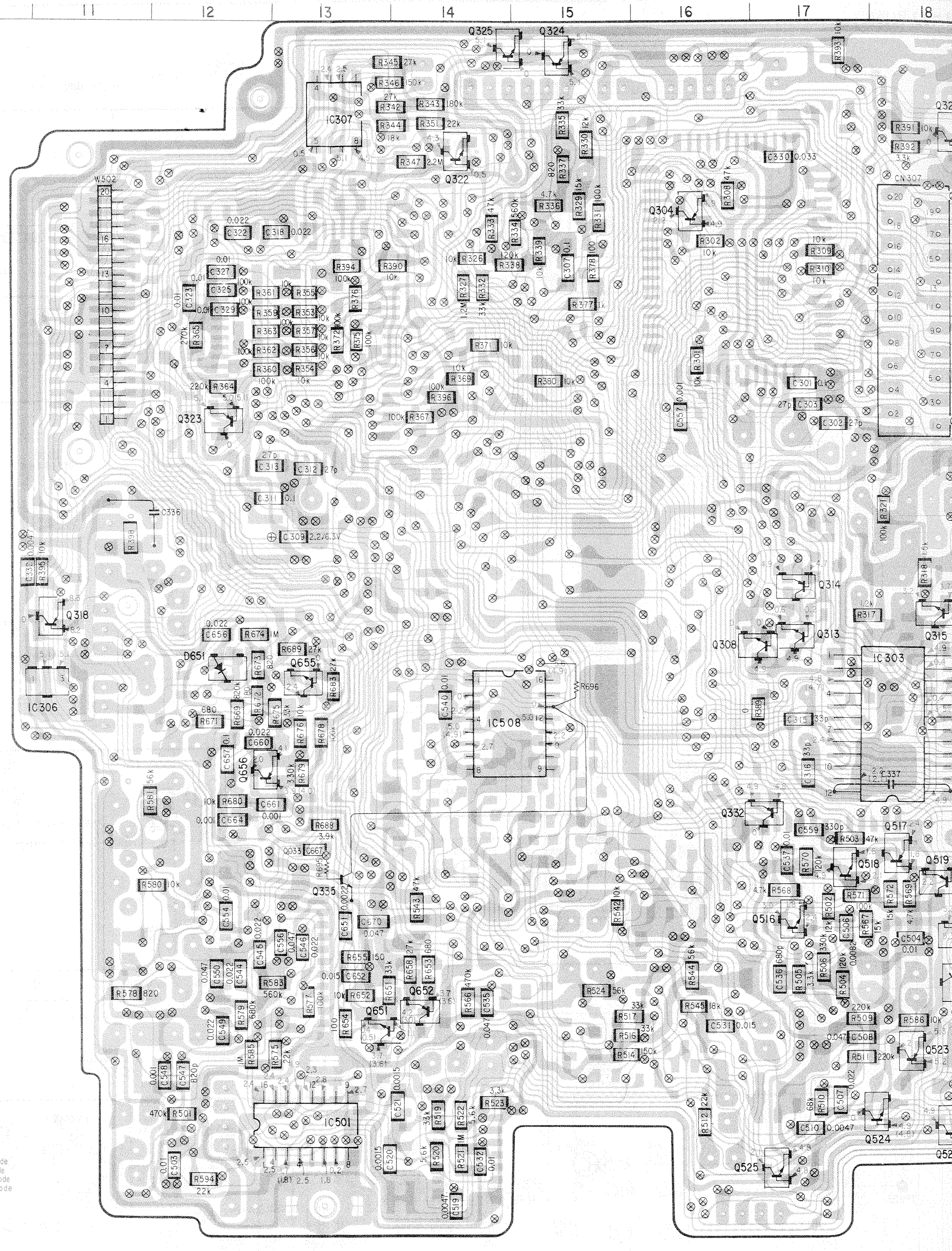
D301	B - 2
D303	E - 3
D304	B - 5
D305	F - 3
D501	I - 3
D503	H - 4
D505	I - 18
D651	F - 12
IC301	B - 4
IC302	C - 7
IC303	F - 18
IC304	B - 6
IC305	E - 9
IC306	F - 11
IC307	A - 13
IC501	J - 13
IC502	H - 3
IC504	I - 4
IC505	J - 6
IC506	C - 9
IC507	B - 9
IC508	F - 14
IC509	I - 8
IC651	F - 8
Q301	G - 2
Q302	F - 2
Q303	G - 2
Q304	B - 16
Q305	F - 19
Q306	H - 18
Q307	F - 4
Q308	F - 16
Q309	F - 3
Q310	F - 3
Q311	E - 3
Q312	E - 3
Q313	F - 17
Q314	E - 17
Q315	E - 18
Q316	E - 19
Q317	E - 2
Q318	E - 11
Q319	C - 19
Q320	F - 3
Q321	F - 3
Q322	B - 14
Q323	D - 12
Q324	A - 15
Q325	A - 14
Q326	C - 5
Q329	A - 18
Q331	A - 2
Q332	G - 16
Q333	G - 4
Q334	H - 13
Q501	G - 6
Q502	G - 6
Q503	F - 7
Q504	G - 6
Q505	F - 6
Q506	G - 5
Q507	F - 5
Q508	G - 7
Q509	G - 6
Q510	G - 7
Q511	G - 5
Q512	G - 5
Q513	H - 5
Q514	H - 5
Q515	I - 6
Q516	H - 17
Q517	G - 18
Q518	H - 17
Q519	H - 18
Q520	J - 18
Q521	I - 18
Q522	I - 2
Q523	I - 18
Q524	J - 17
Q525	J - 17
Q651	I - 13
Q652	I - 14
Q653	H - 6
Q654	F - 9
Q655	F - 13
Q656	G - 12
Q657	G - 8
RV301	E - 2
RV501	I - 3
RV502	H - 9

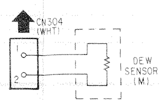
SS-64 BOARD (COMPONENT SIDE)

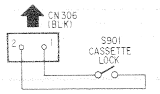

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
IC301
IC302
IC304
IC305
IC502
IC504
IC505
IC506
IC507
IC509
IC651
CN301
CN302
CN303
CN304
CN305
CN306
CN308
CN309
CN310
CN311
CN313
CN314
CN501
X301
X302
RV301
RV501
RV502
1-619-996-
11

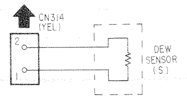
no mark : REC mode
( ) : PB mode
〈 〉 : CUE mode
[ ] : REV mode

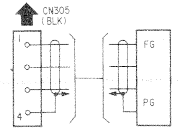
SS-64 BOARD (SOLDER SIDE)

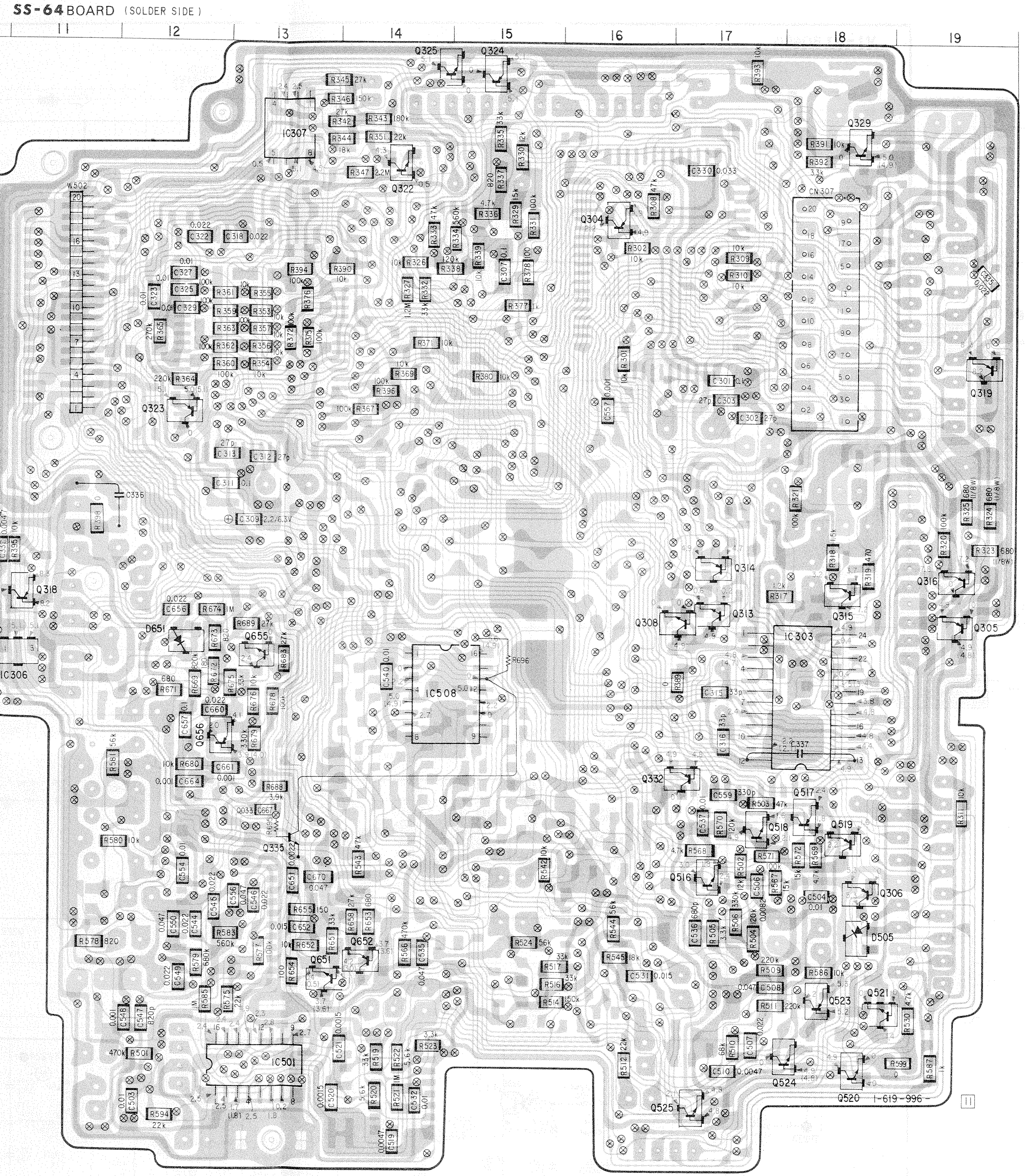

11
12
13
14
15
16
17
18
IC303
IC306
IC307
IC501
IC508
Q304
Q308
Q313
Q314
Q318
Q322
Q323
Q324
Q325
Q332
Q335
Q516
Q517
Q518
Q524
Q525
Q651
Q652
Q655
D651


CN304
(WHT)
1
2
DEW
SENSOR
(M)

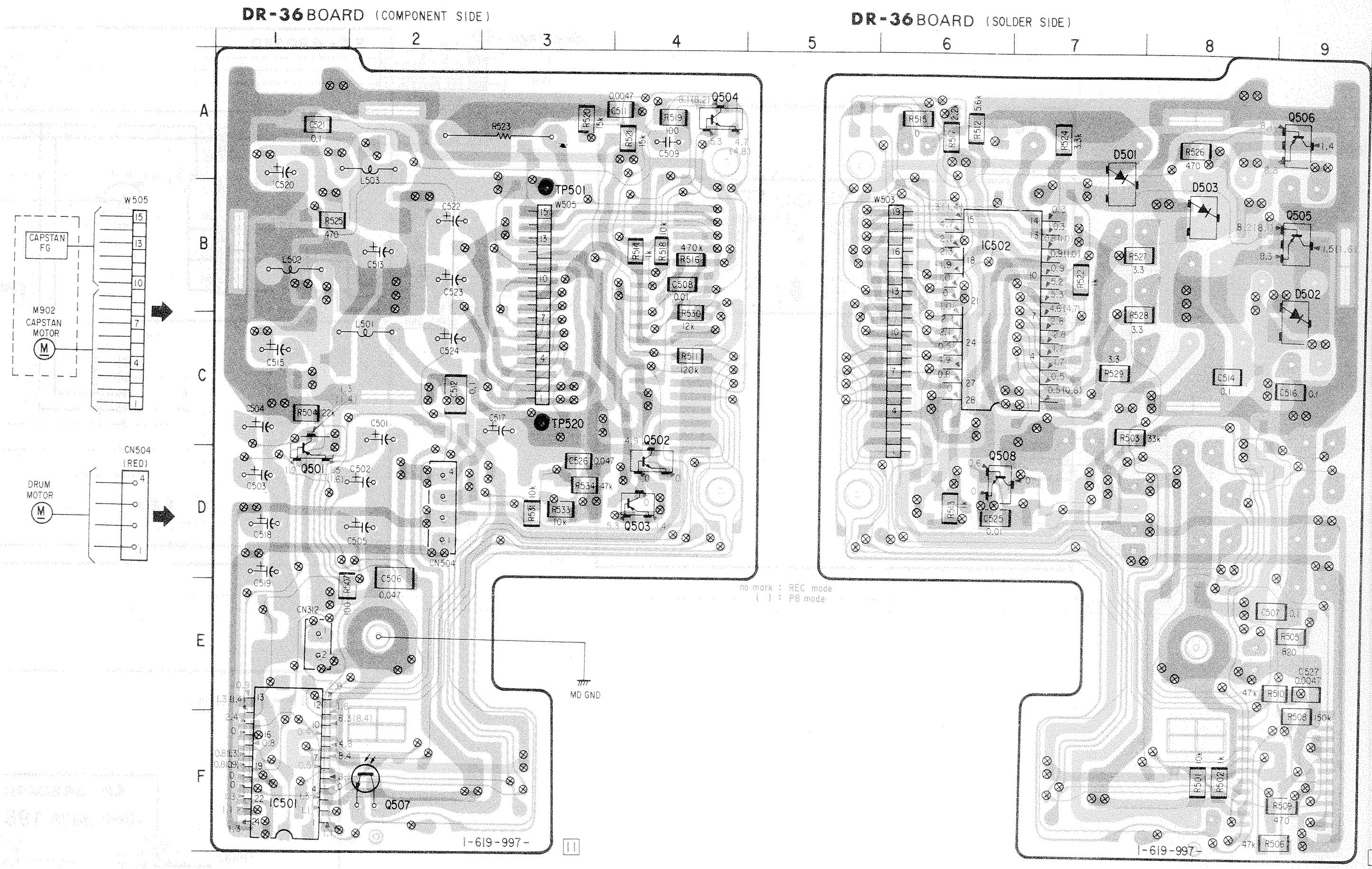

CN306
(BLK)
2
1
S901
CASSETTE
LOCK


CN314
(YEL)
2
1
DEW
SENSOR
(S)

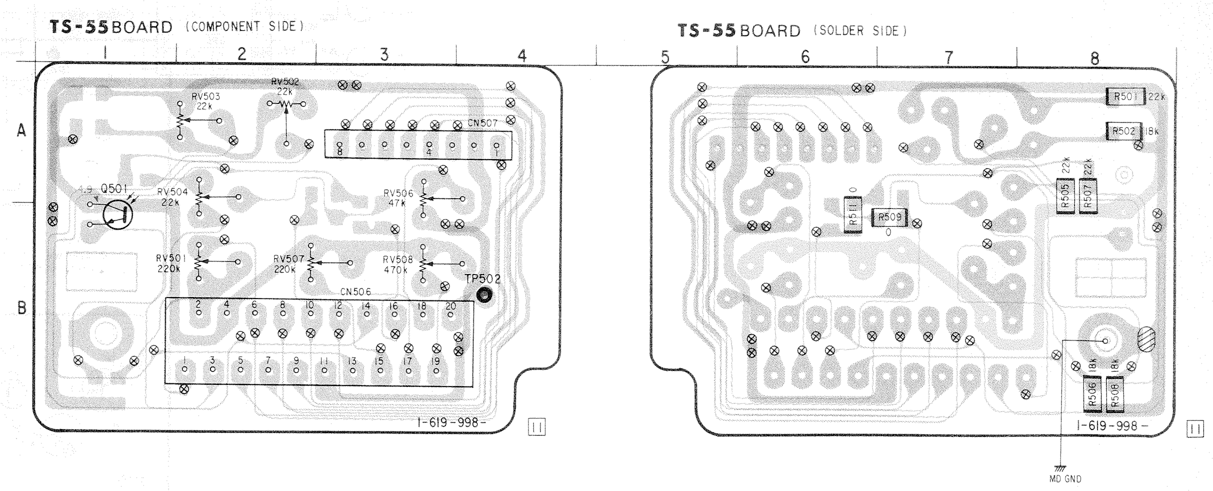

CN305
(BLK)
1
4
FG
PG


SS-64 BOARD (SOLDER SIDE)
11
12
13
14
15
16
17
18
19
IC307
IC306
IC303
IC508
IC501
Q318
Q319
Q305
Q306
Q308
Q313
Q314
Q315
Q316
Q322
Q323
Q324
Q325
Q329
Q332
Q335
Q517
Q518
Q519
Q520
Q521
Q523
Q524
Q525
Q651
Q652
Q655
Q656
D505
D651
CN507
1-619-996

D501	A - 7
D502	B - 9
D503	B - 8
IC501	F - 1
IC502	B - 6
Q501	D - 1
Q502	D - 4
Q503	D - 4
Q504	A - 4
Q505	B - 9
Q506	A - 9
Q507	F - 2
Q508	D - 6
TP501	B - 3
TP520	C - 3


DR-36 BOARD (COMPONENT SIDE)
DR-36 BOARD (SOLDER SIDE)
1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
W505
CAPSTAN FG
M902 CAPSTAN MOTOR
M
CN504 (RED)
DRUM MOTOR
TP501
TP520
Q501
Q502
Q503
Q504
Q505
Q506
Q507
Q508
D501
D502
D503
IC501
IC502
MD GND
1-619-997

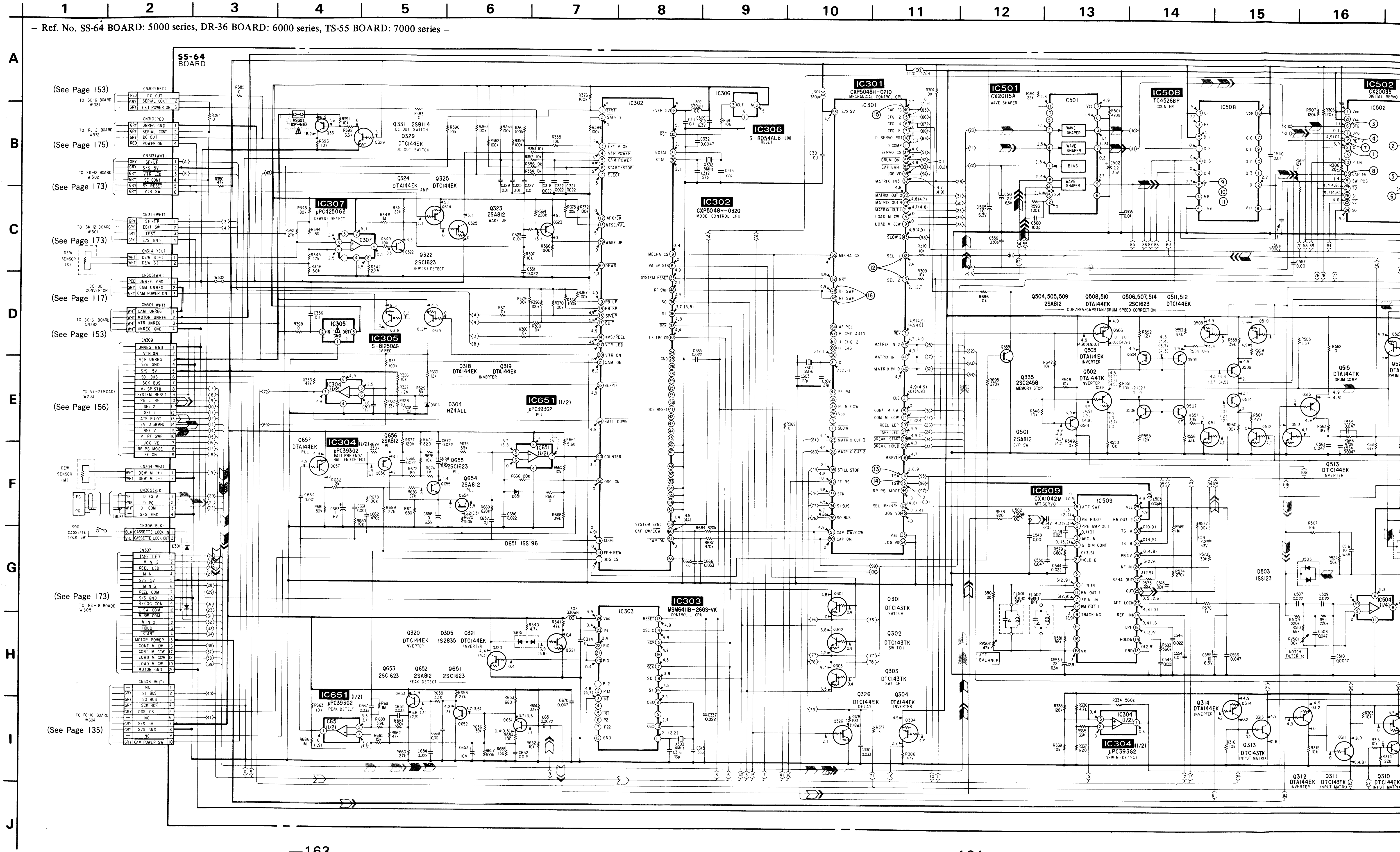
Q501	B - 1
RV501	B - 2
RV502	A - 2
RV503	A - 2
RV504	A - 2
RV506	A - 3
RV507	B - 2
RV508	B - 3
TP502	B - 4


TS-55 BOARD (COMPONENT SIDE)
TS-55 BOARD (SOLDER SIDE)
1
2
3
4
5
6
7
8
A
B
Q501
RV501 220k
RV502 22k
RV503 22k
RV504 22k
RV506 47k
RV507 220k
RV508 470k
TP502
CN506
CN507
R501 22k
R502 18k
MD GND
1-619-998

SERVO, SYSTEM CONTROL SERVO, SYSTEM CONTROL

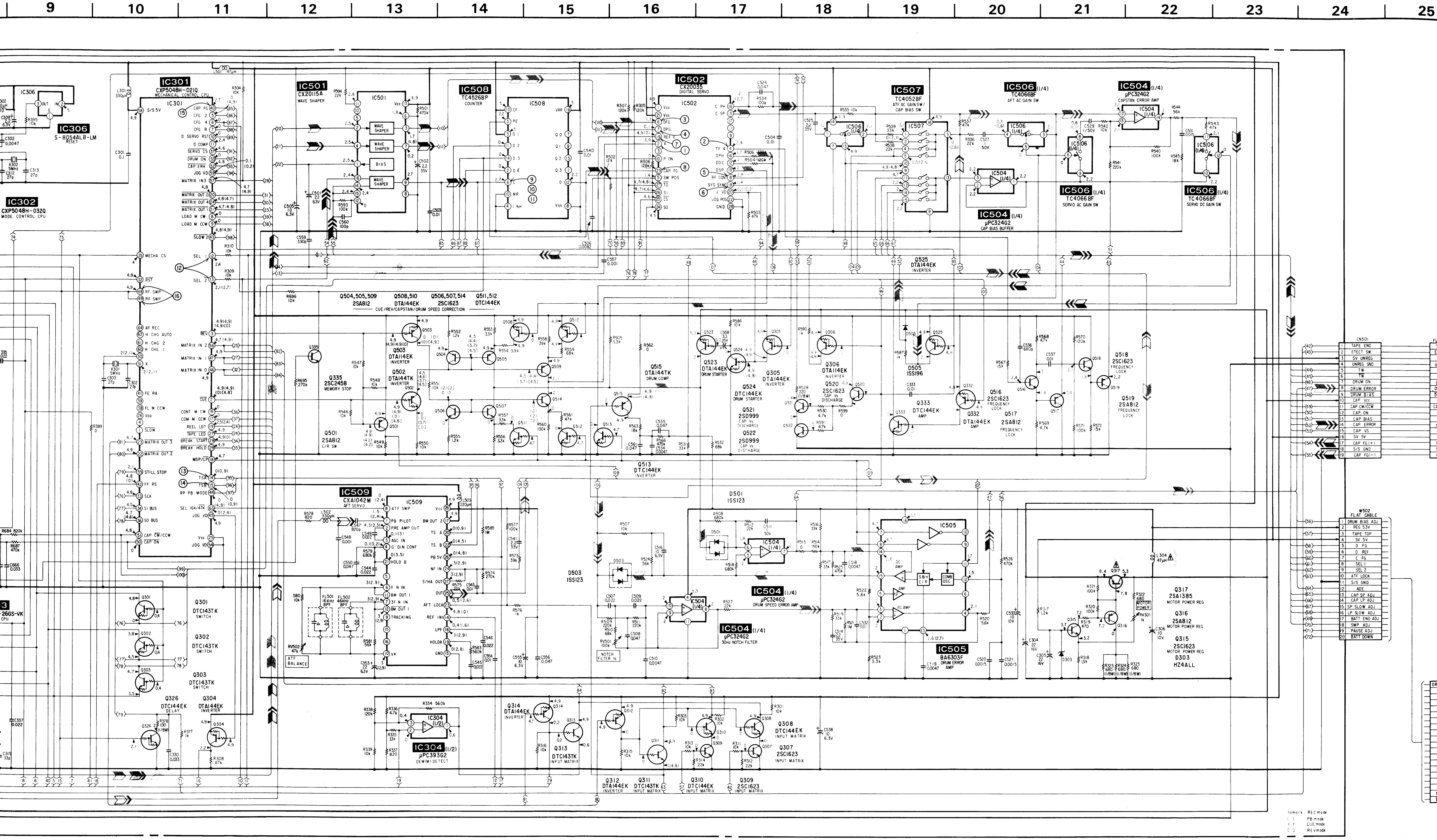
SS-64 (SYSTEM CONTROL/SERVO), DR-36 (DRUM/CAPSTAN MOTOR DRIVE, TAPE END SENSOR), TS-55 (TAPE TOP SENSOR) SCHEMATIC DIAGRAM

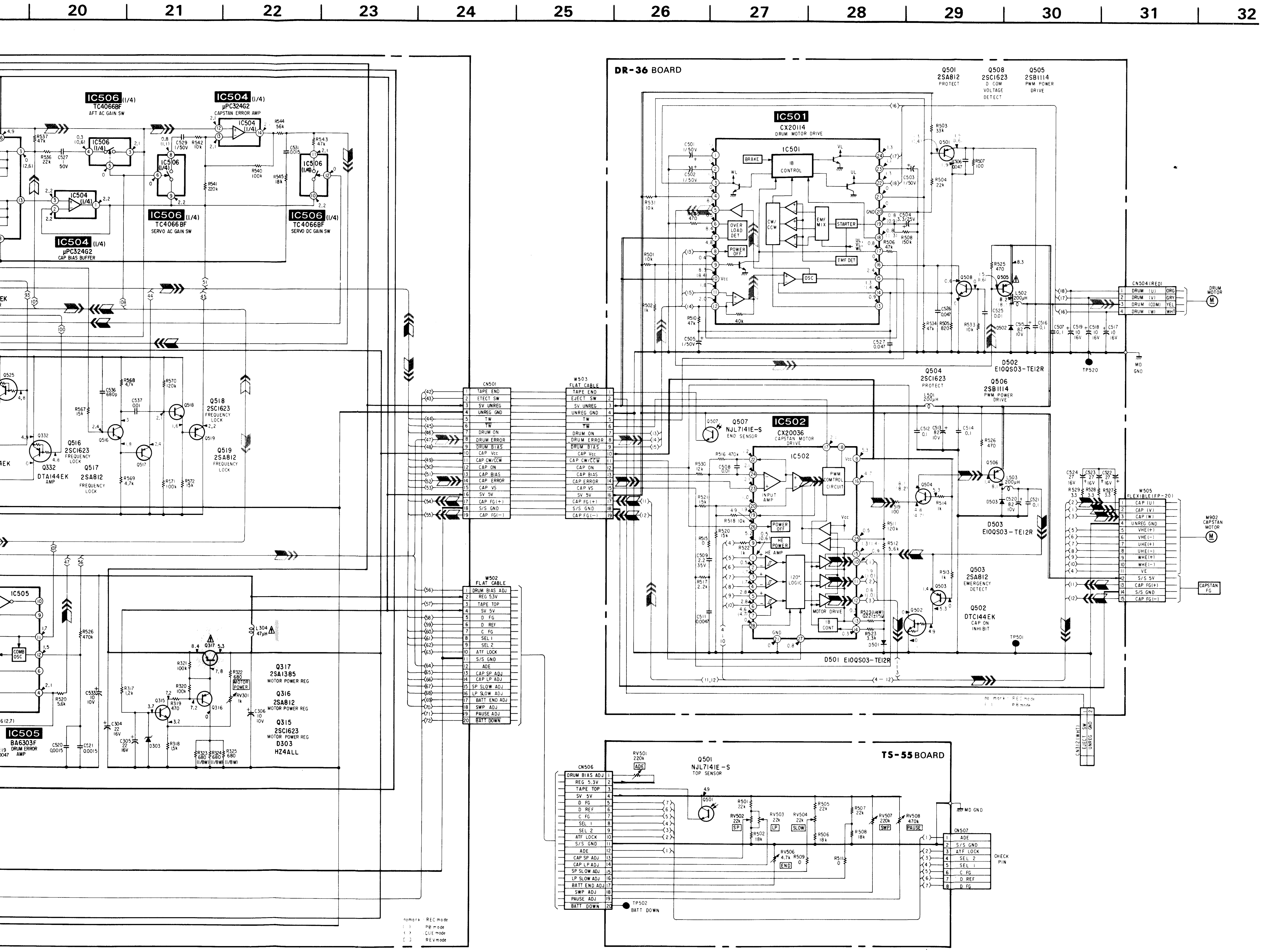
– Ref. No. SS-64 BOARD: 5000 series, DR-36 BOARD: 6000 series, TS-55 BOARD: 7000 series –



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
SS-64 BOARD
(See Page 153)
(See Page 175)
(See Page 173)
(See Page 173)
(See Page 117)
(See Page 153)
(See Page 156)
(See Page 173)
(See Page 135)
IC301 CXP5048H-021Q MECHANICAL CONTROL CPU
IC302 CXP5048H-032Q MODE CONTROL CPU
IC303 MSM6411B-266S-VK CONTROL L CPU
IC304 (1/2) μPC393G2 BATT PRE END/ BATT END DETECT
IC304 (1/2) μPC393G2 DEW(M) DETECT
IC305 S-81250AG 5V REG
IC306 S-8054ALB-LM RESET
IC307 μPC4250G2 DEW(S) DETECT
IC501 CX20115A WAVE SHAPER
IC502 CX20035 DIGITAL SERVO
IC508 TC4526BP COUNTER
IC509 CXA1042M AFT SERVO
IC651 (1/2) μPC393G2 PLL
IC651 (1/2) μPC393G2 PEAK DETECT
IC504 (1/4)
Q331 2SB1114 DC OUT SWITCH
Q329 DTC144EK DC OUT SWITCH
Q324 DTA144EK AMP
Q325 DTC144EK
Q323 2SA812 WAKE UP
Q322 2SC1623 DEW(S) DETECT
Q318 DTA144EK
Q319 DTA144EK INVERTER
D304 HZ4ALL
Q657 DTA144EK PLL
Q656 2SA812 PLL
Q655 2SC1623
Q654 2SA812 PLL
D651 1SS196
Q320 DTC144EK INVERTER
D305 1S2835
Q321 DTC144EK INVERTER
Q653 2SC1623
Q652 2SA812 PEAK DETECT
Q651 2SC1623
Q301 DTC143TK SWITCH
Q302 DTC143TK SWITCH
Q303 DTC143TK SWITCH
Q326 DTC144EK DELAY
Q304 DTA144EK INVERTER
Q504,505,509 2SA812
Q508,510 DTA144EK
Q506,507,514 2SC1623
Q511,512 DTC144EK
CUE/REV/CAPSTAN/DRUM SPEED CORRECTION
Q503 DTA114EK INVERTER
Q502 DTA144TK INVERTER
Q335 2SC2458 MEMORY STOP
Q501 2SA812 C/R SW
Q515 DTA144TK DRUM COMP
Q513 DTC144EK INVERTER
D503 1SS123
Q314 DTA144EK INVERTER
Q313 DTC143TK INPUT MATRIX
Q312 DTA144EK INVERTER
Q311 DTC143TK INPUT MATRIX
Q310 DTC143TK INPUT MATRIX

R) SCHEMATIC DIAGRAM


9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
IC306
IC306 S-8054ALB-LM RESET
IC301 CXP5048H-021Q MECHANICAL CONTROL CPU
IC302 CXP5048H-032Q MODE CONTROL CPU
IC501 CX20115A WAVE SHAPER
IC508 TC4526BP COUNTER
IC502 CX20035 DIGITAL SERVO
IC507 TC4052BF ATF AC GAIN SW/CAP BIAS SW
IC506 (1/4) TC4066BF AFT AC GAIN SW
IC504 (1/4) μPC324G2 CAPSTAN ERROR AMP
IC506 (1/4) TC4066BF SERVO AC GAIN SW
IC506 (1/4) TC4066BF SERVO DC GAIN SW
IC504 (1/4) μPC324G2 CAP BIAS BUFFER
Q504,505,509 2SA812
Q508,510 DTA144EK
Q506,507,514 2SC1623
Q511,512 DTC144EK
CUE/REV/CAPSTAN/DRUM SPEED CORRECTION
Q335 2SC2458 MEMORY STOP
Q503 DTA114EK INVERTER
Q502 DTA144TK INVERTER
Q501 2SA812 C/R SW
Q515 DTA144TK DRUM COMP
Q513 DTC144EK INVERTER
Q523 DTA144EK DRUM STARTER
Q524 DTC144EK DRUM STARTER
Q305 DTA144EK INVERTER
Q306 DTA114EK INVERTER
Q520 2SC1623 CAP Vs DISCHARGE
Q521 2SD999 CAP Vs DISCHARGE
Q522 2SD999 CAP Vs DISCHARGE
Q525 DTA144EK INVERTER
D505 ISS196
Q333 DTC144EK AMP
Q332 DTA144EK AMP
Q516 2SC1623 FREQUENCY LOCK
Q517 2SA812 FREQUENCY LOCK
Q518 2SC1623 FREQUENCY LOCK
Q519 2SA812 FREQUENCY LOCK
CN501
IC509 CXA1042M AFT SERVO
D501 ISS123
D503 ISS123
IC504 (1/4) μPC324G2 DRUM SPEED ERROR AMP
IC504 (1/4) μPC324G2 30Hz NOTCH FILTER
IC505 BA6303F DRUM ERROR AMP
Q317 2SA1385 MOTOR POWER REG
Q316 2SA812 MOTOR POWER REG
Q315 2SC1623 MOTOR POWER REG
D303 HZ4ALL
W502 FLAT CABLE
Q301 DTC143TK SWITCH
Q302 DTC143TK SWITCH
Q303 DTC143TK SWITCH
Q326 DTC144EK DELAY
Q304 DTA144EK INVERTER
IC304 (1/2) μPC393G2 DEW(MI) DETECT
Q314 DTA144EK INVERTER
Q313 DTC143TK INPUT MATRIX
Q312 DTA144EK INVERTER
Q311 DTC143TK INPUT MATRIX
Q310 DTC144EK INPUT MATRIX
Q309 2SC1623 INPUT MATRIX
Q308 DTC144EK INPUT MATRIX
Q307 2SC1623 INPUT MATRIX
no mark : REC mode
( ) : PB mode
< > : CUE mode
[ ] : REV mode


20
21
22
23
24
25
26
27
28
29
30
31
32
DR-36 BOARD
TS-55 BOARD
IC501 CX20114 DRUM MOTOR DRIVE
IC502 CX20036 CAPSTAN MOTOR DRIVE
IC504 (1/4) μPC324G2 CAPSTAN ERROR AMP
IC504 (1/4) μPC324G2 CAP BIAS BUFFER
IC506 (1/4) TC4066BF AFT AC GAIN SW
IC506 (1/4) TC4066BF SERVO AC GAIN SW
IC506 (1/4) TC4066BF SERVO DC GAIN SW
IC505 BA6303F DRUM ERROR AMP
Q501 2SA812 PROTECT
Q508 2SC1623 D COM VOLTAGE DETECT
Q505 2SB1114 PWM POWER DRIVE
Q504 2SC1623 PROTECT
Q506 2SB1114 PWM POWER DRIVE
Q507 NJL7141E-S END SENSOR
Q503 2SA812 EMERGENCY DETECT
Q502 DTC144EK CAP ON INHIBIT
D502 E10QS03-TE12R
D503 E10QS03-TE12R
D501 E10QS03-TE12R
Q518 2SC1623 FREQUENCY LOCK
Q519 2SA812 FREQUENCY LOCK
Q516 2SC1623 FREQUENCY LOCK
Q517 2SA812 FREQUENCY LOCK
Q332 DTA144EK AMP
Q317 2SA1385 MOTOR POWER REG
Q316 2SA812 MOTOR POWER REG
Q315 2SC1623 MOTOR POWER REG
D303 HZ4ALL
CN501
W503 FLAT CABLE
W502 FLAT CABLE
CN504 (RED)
DRUM MOTOR
W505 FLEXIBLE (FP-20)
M902 CAPSTAN MOTOR
CAPSTAN FG
CN506
CN507
CHECK PIN
Q501 NJL7141E-S TOP SENSOR
TP502 BATT DOWN
TP520
TP501
MD GND

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ▭ : panel designation.
- ▭ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10MΩ)

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Signal Path

	REC	REC/PB	PB
Drum speed servo		➡	
Drum phase servo		➡➡	
Drum servo (speed and phase)		➡➡➡	
Capstan speed servo		➡	
Capstan phase servo	➡➡		⇨⇨
Capstan servo (speed and phase)		➡➡➡	

Note (Printed Wiring Board):

- ⊗ : mark is slew hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the pattern side.
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (SK-12: Q301, 302, 303, RS-18: Q302, 303, 304, 307, 310, 312, 314) transistor with resistors.
  Refer to the SK-12, RS-18 boards schematic diagram for digital transistor.

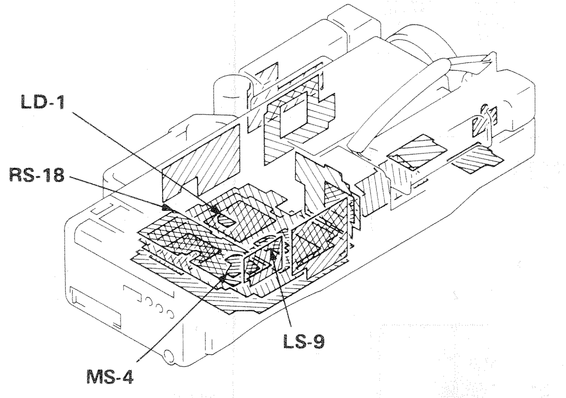
Note

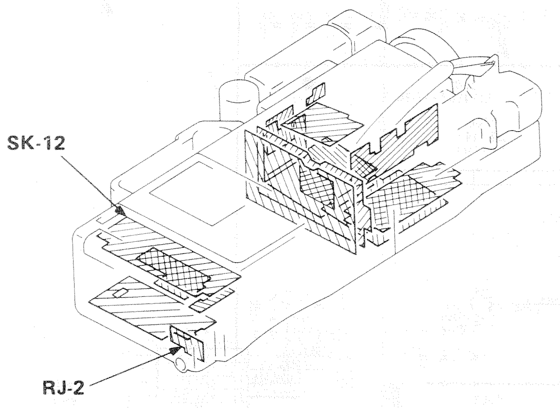
Soldering side:	Parts on the soldering side being seen from the soldering are stated.
Component side:	Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

* Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).

* Pattern being seen in the state of the rear surface side is indicated in green pattern.

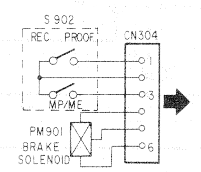

LD-1
RS-18
MS-4
LS-9



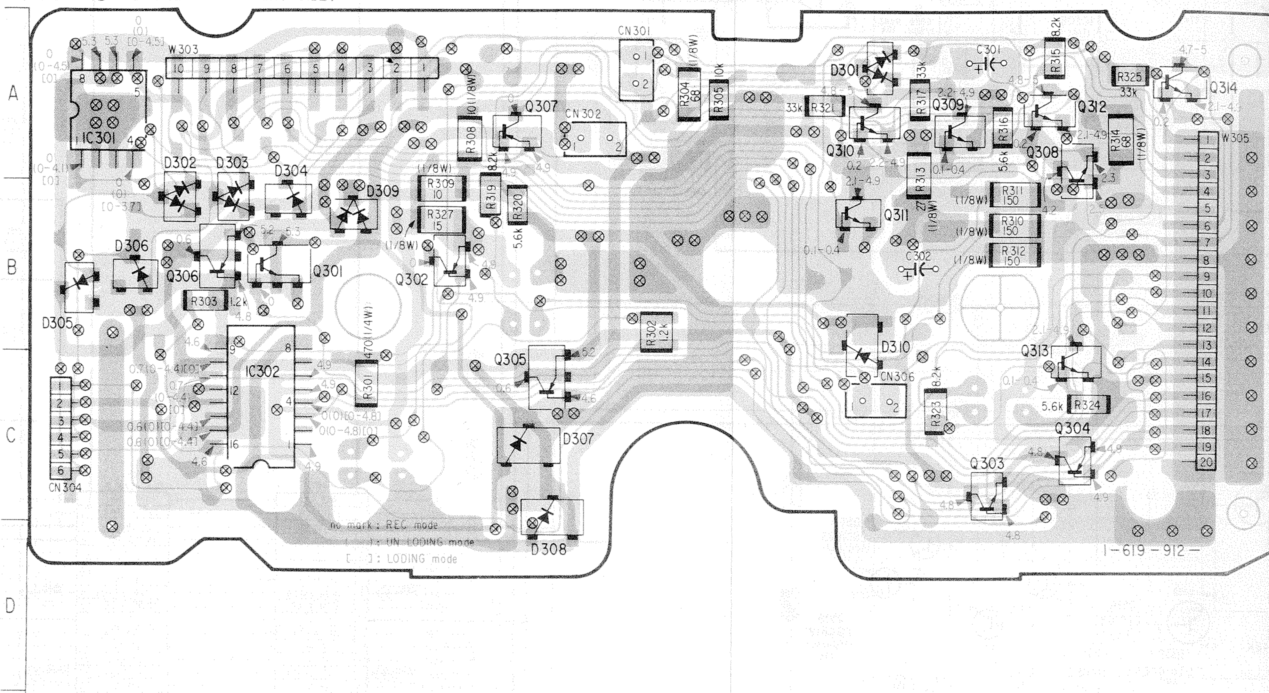
RS-18 (CONTROL/LOADING MOTOR, SOLENOID DRIVE), LS-9 (LOADING SWITCH), MS-4 (MODE SWITCH, CONTROL MOTOR), LD-1 (TAPE TOP/E

– Ref. No. RS-18, LD-1 BOARD: 6000 series, SK-12, RJ-2 BOARD: 7000 series –

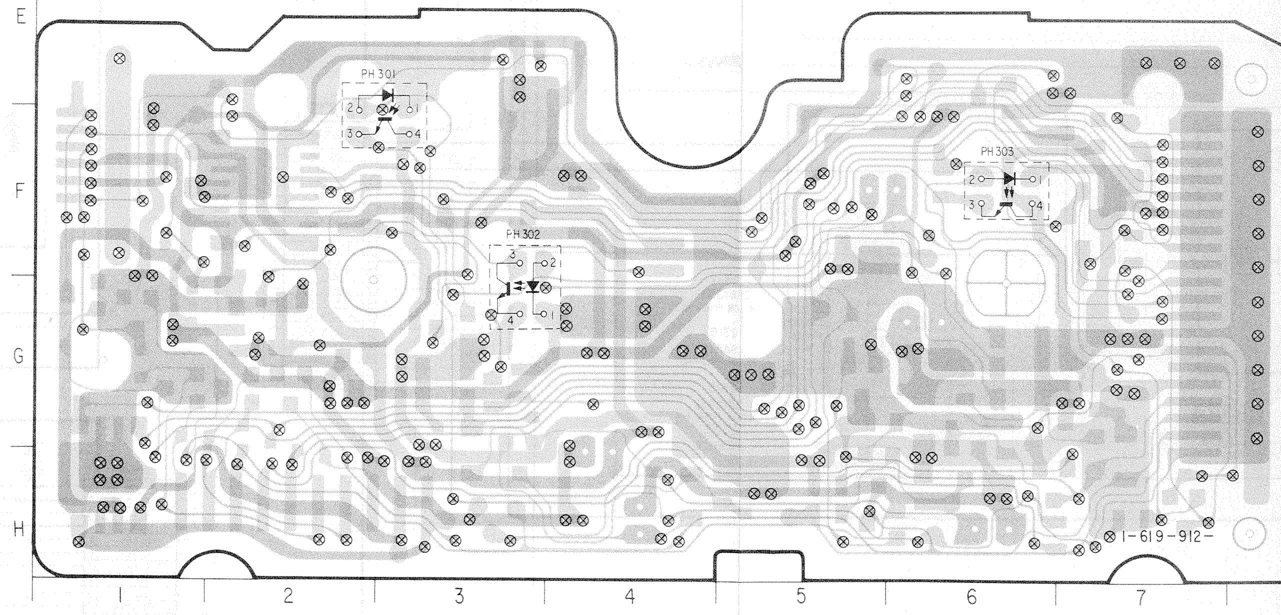
D301	A - 5
D302	B - 1
D303	B - 2
D304	B - 2
D305	B - 1
D306	B - 1
D307	C - 4
D308	C - 4
D309	B - 2
D310	B - 6
IC301	A - 1
IC302	C - 2
PH301	F - 3
PH302	G - 3
PH303	F - 6
Q301	B - 2
Q302	B - 3
Q303	C - 6
Q304	C - 7
Q305	C - 4
Q306	B - 2
Q307	A - 3
Q308	A - 7
Q309	A - 6
Q310	A - 5
Q311	B - 5
Q312	A - 7
Q313	C - 7
Q314	A - 7


S 902
REC
PROOF
MP/ME
CN304
1
3
6
PM901
BRAKE
SOLENOID

RS-18 BOARD (COMPONENT SIDE)


A
B
C
D
IC301
IC302
W303
CN301
CN302
CN304
CN306
W305
D301
D302
D303
D304
D305
D306
D307
D308
D309
D310
Q301
Q302
Q303
Q304
Q305
Q306
Q307
Q308
Q309
Q310
Q311
Q312
Q313
Q314
C301
C302
R301
R303
R304
R305
R308
R309
R310
R311
R312
R313
R315
R316
R317
R319
R320
R321
R322
R323
R324
R325
R327
No mark : REC mode
( ) : UN-LOADING mode
[ ] : LOADING mode
1-619-912-

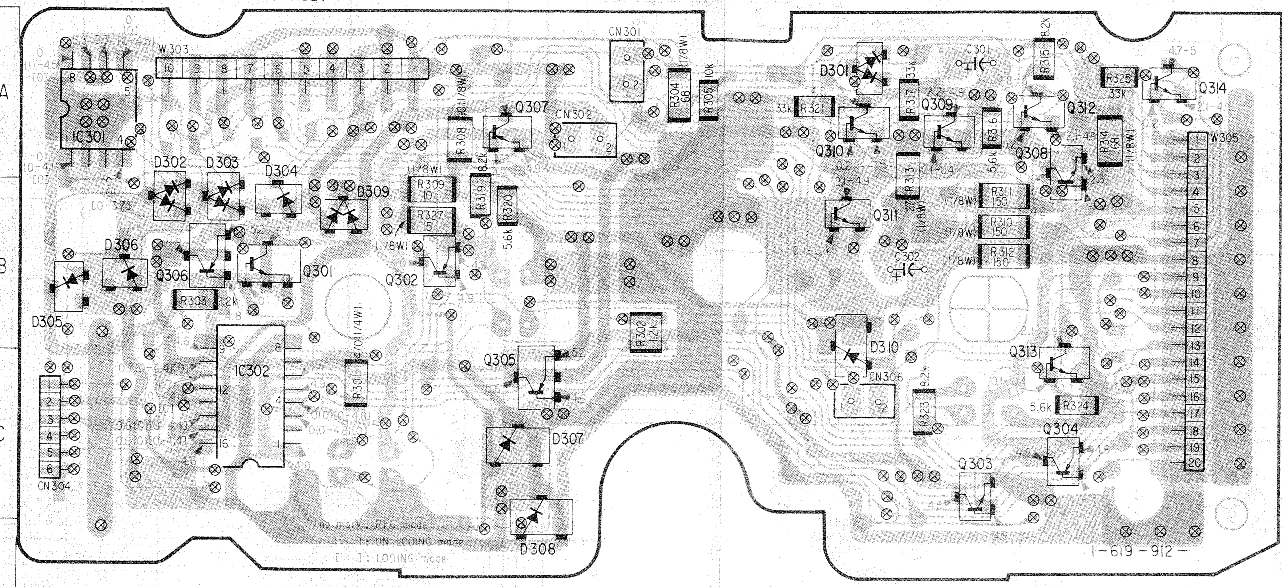
RS-18 BOARD (SOLDER SIDE)


E
F
G
H
PH301
PH302
PH303
1-619-912-
1
2
3
4
5
6
7

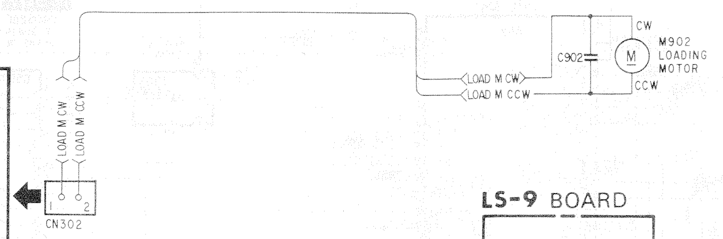
OLENOID DRIVE), LS-9 (LOADING SWITCH), MS-4 (MODE SWITCH, CONTROL MOTOR), LD-1 (TAPE TOP/END LED), SK-12 (DISPLAY, FUNCTION CONTROL), RJ-2 (WIRED REMOTE CONTROL TERMINAL) PRINTED WIRING BOARD

-12, RJ-2 BOARD: 7000 series –

RS-18 BOARD (COMPONENT SIDE)

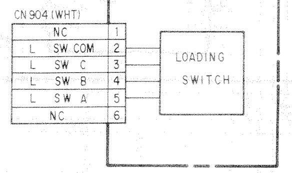


W303
IC301
IC302
D302
D303
D304
D305
D306
D307
D308
D309
D310
Q301
Q302
Q303
Q304
Q305
Q306
Q307
Q308
Q309
Q310
Q311
Q312
Q313
Q314
CN301
CN302
CN304
CN306
W305
D301
C301
C302
no mark : REC mode
( ) : UN LOADING mode
[ ] : LODING mode
1-619-912-



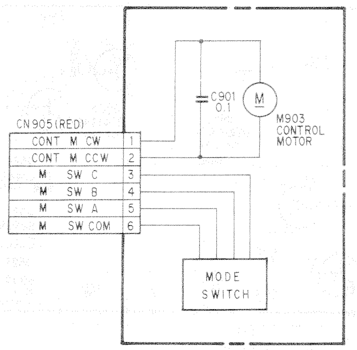
CN302
LOAD M CW
LOAD M CCW
C902
M902
LOADING MOTOR
CW
CCW

LS-9 BOARD



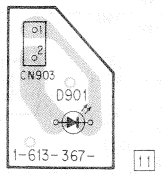
CN904 (WHT)
NC
L SW COM
L SW C
L SW B
L SW A
NC
LOADING SWITCH

MS-4 BOARD



CN905 (RED)
CONT M CW
CONT M CCW
M SW C
M SW B
M SW A
M SW COM
C901 0.1
M903 CONTROL MOTOR
MODE SWITCH

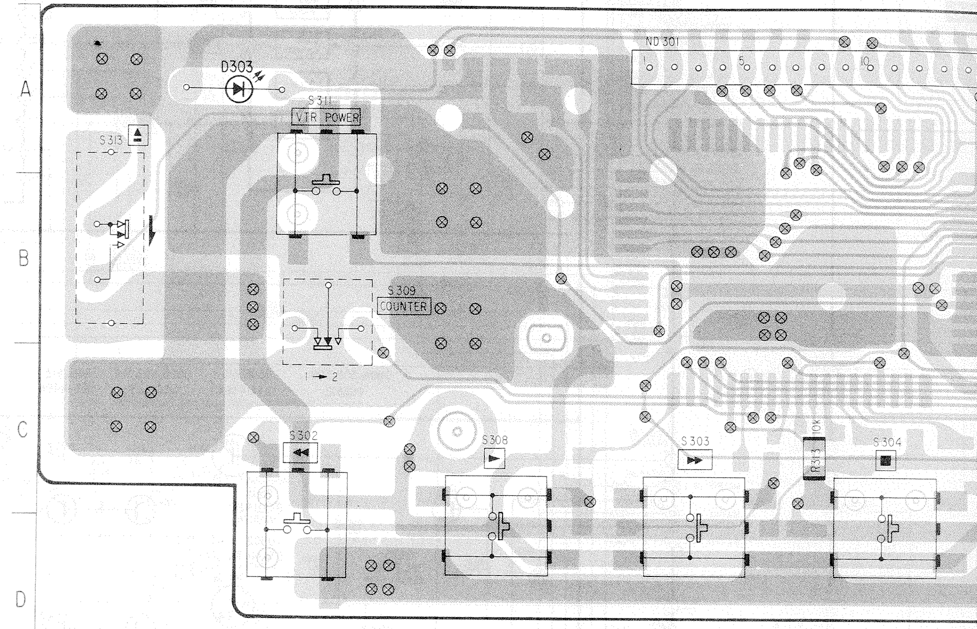
LD-1 BOARD



CN903
D901
1-613-367-

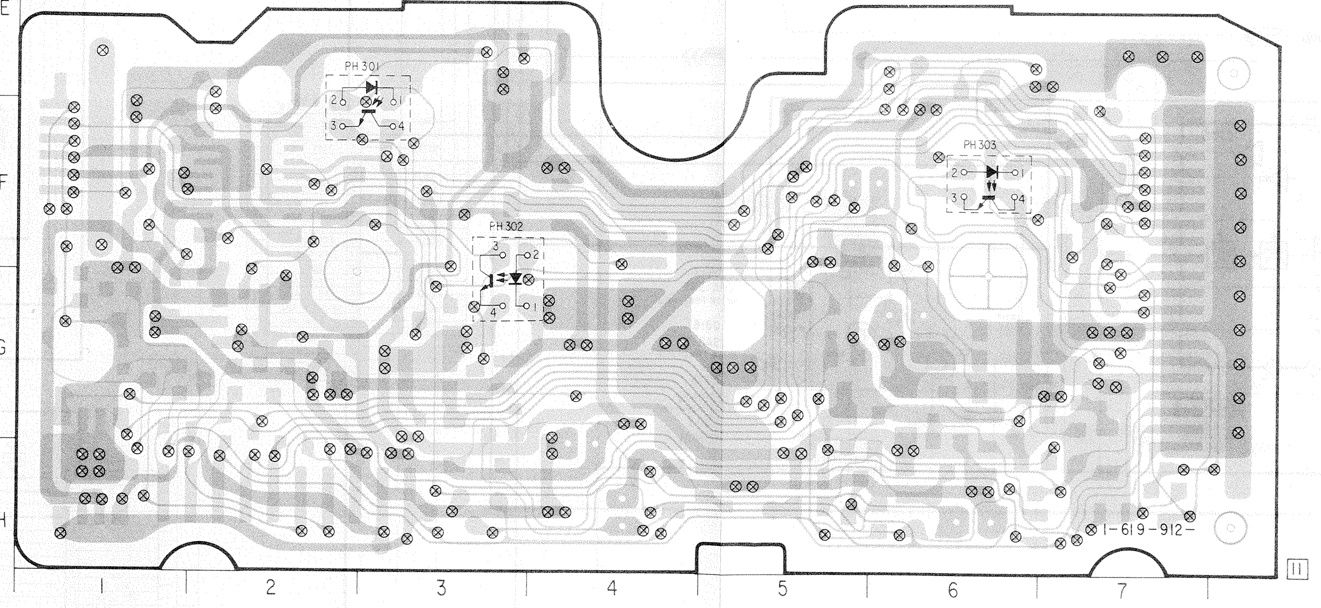
D301	B-8
D302	H-7
D303	A-2
IC301	G-5
IC302	G-7
Q301	B-8
Q302	C-7
Q303	H-8
TP301	B-9
TP302	A-9

SK-12 BOARD (COMPONENT SIDE)



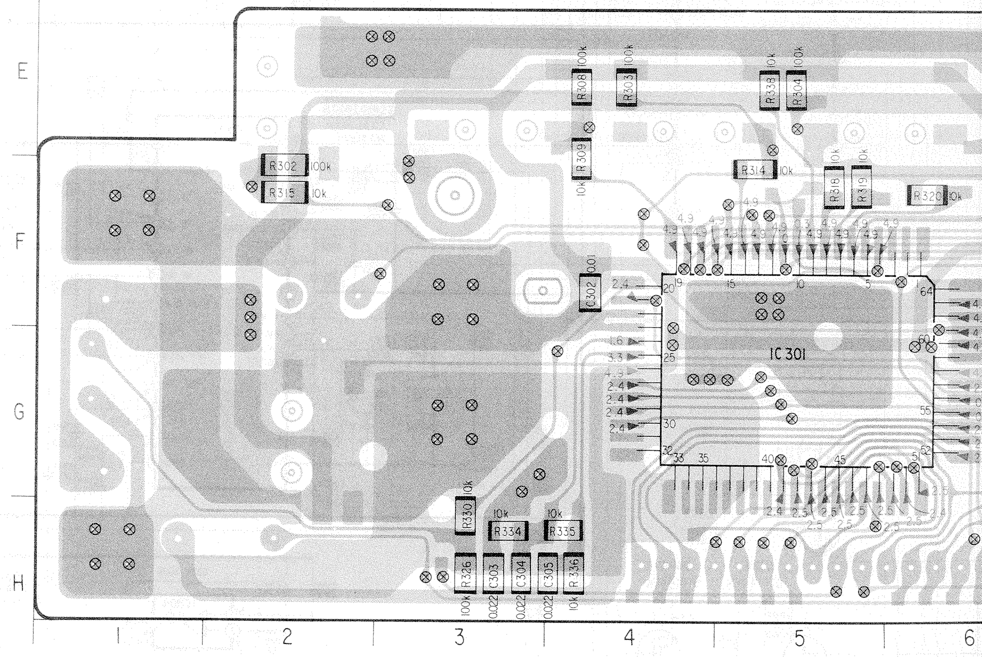
ND301
D303
S311
VTR POWER
S313
S309
COUNTER
S302
S308
S303
S304

RS-18 BOARD (SOLDER SIDE)



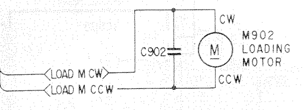
PH301
PH302
PH303
1-619-912-

SK-12 BOARD (SOLDER SIDE)

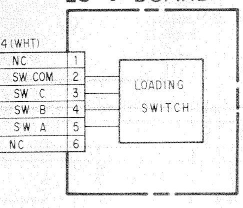


R302
R319
R308
R309
R314
R315
R320
IC301
R330
R334
R335
R326

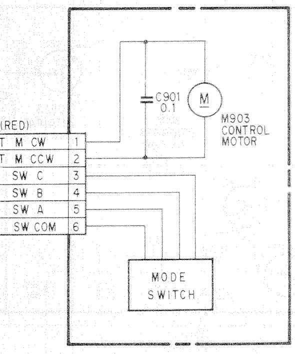
N CONTROL), RJ-2 (WIRED REMOTE CONTROL TERMINAL) PRINTED WIRING BOARD


C902
M902
LOADING
MOTOR
CW
CCW
LOAD M CW
LOAD M CCW

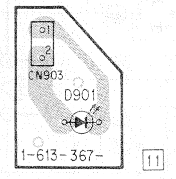
LS-9 BOARD


4 (WHT)
NC
SW COM
SW C
SW B
SW A
NC
LOADING
SWITCH

MS-4 BOARD

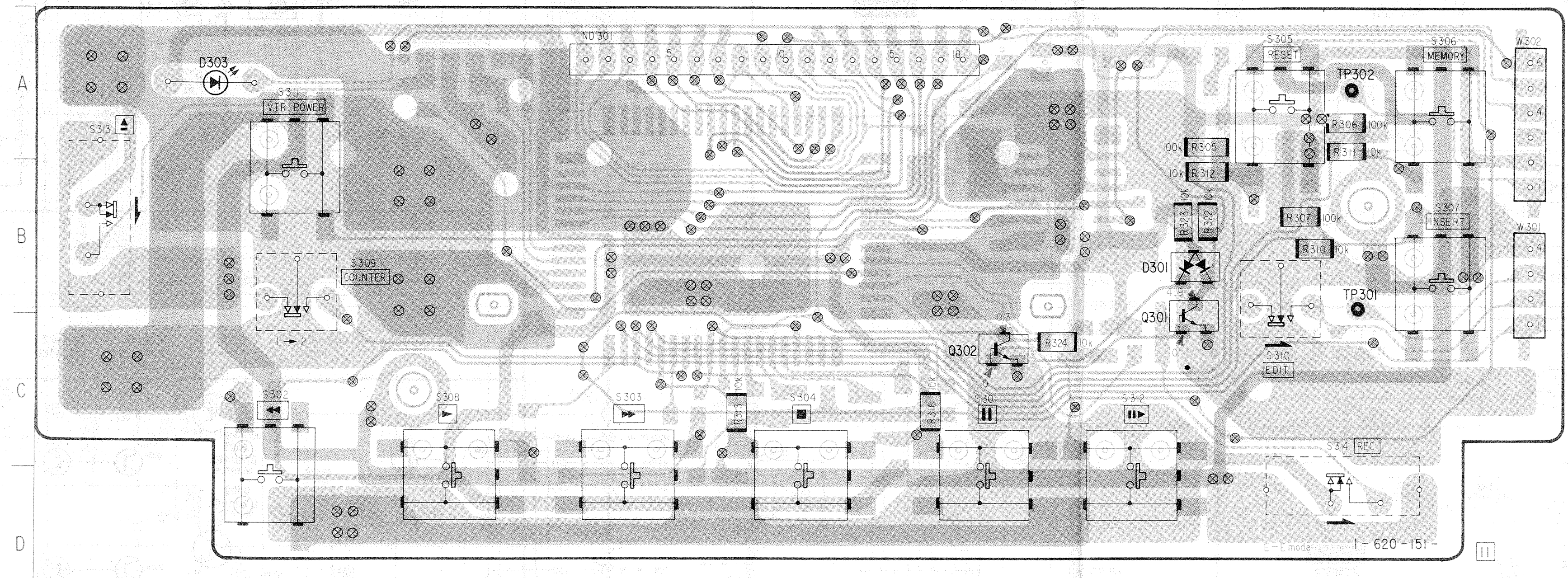

(RED)
T M CW
T M CCW
SW C
SW B
SW A
SW COM
C901
0.1
M903
CONTROL
MOTOR
MODE
SWITCH

LD-1
BOARD

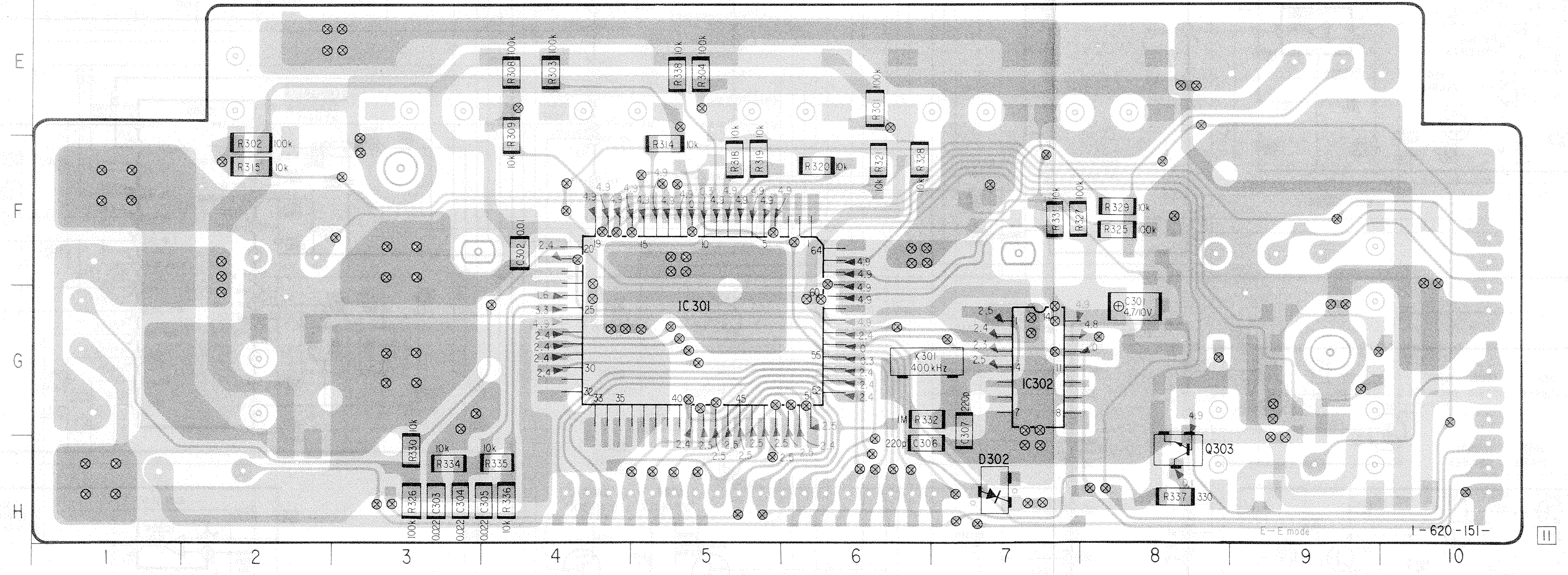

CN903
D901
1-613-367-
11

D301	B-8
D302	H-7
D303	A-2
IC301	G-5
IC302	G-7
Q301	B-8
Q302	C-7
Q303	H-8
TP301	B-9
TP302	A-9

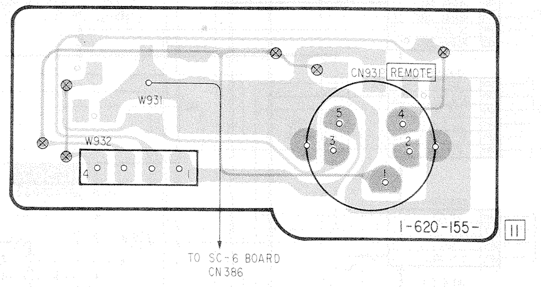
SK-12 BOARD (COMPONENT SIDE)


A
B
C
D
ND301
D303
S311
VTR POWER
S313
S309
COUNTER
S305
RESET
S306
MEMORY
TP302
R305
R312
R306
R311
S307
INSERT
R307
R310
D301
Q301
TP301
Q302
R324
S310
EDIT
S302
S308
S303
S304
S301
S312
S314
REC
W302
W301
1-620-151-
11

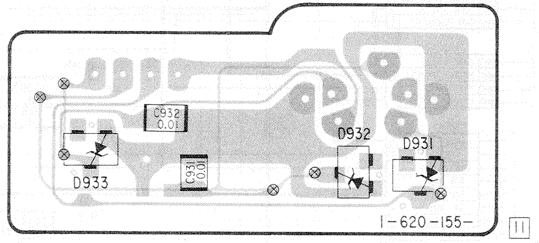
SK-12 BOARD (SOLDER SIDE)


E
F
G
H
R302
R315
R308
R303
R309
R314
R338
R304
R318
R319
R320
R321
R328
R331
R327
R329
R325
IC301
C301
4.7/10V
X301
400kHz
IC302
R332
C306
C307
D302
Q303
R337
R330
R334
R335
R336
C303
C304
C305
1-620-151-
11
1
2
3
4
5
6
7
8
9
10

RJ-2 BOARD (COMPONENT SIDE)


CN931
REMOTE
W931
W932
1-620-155-
11
TO SC-6 BOARD
CN386

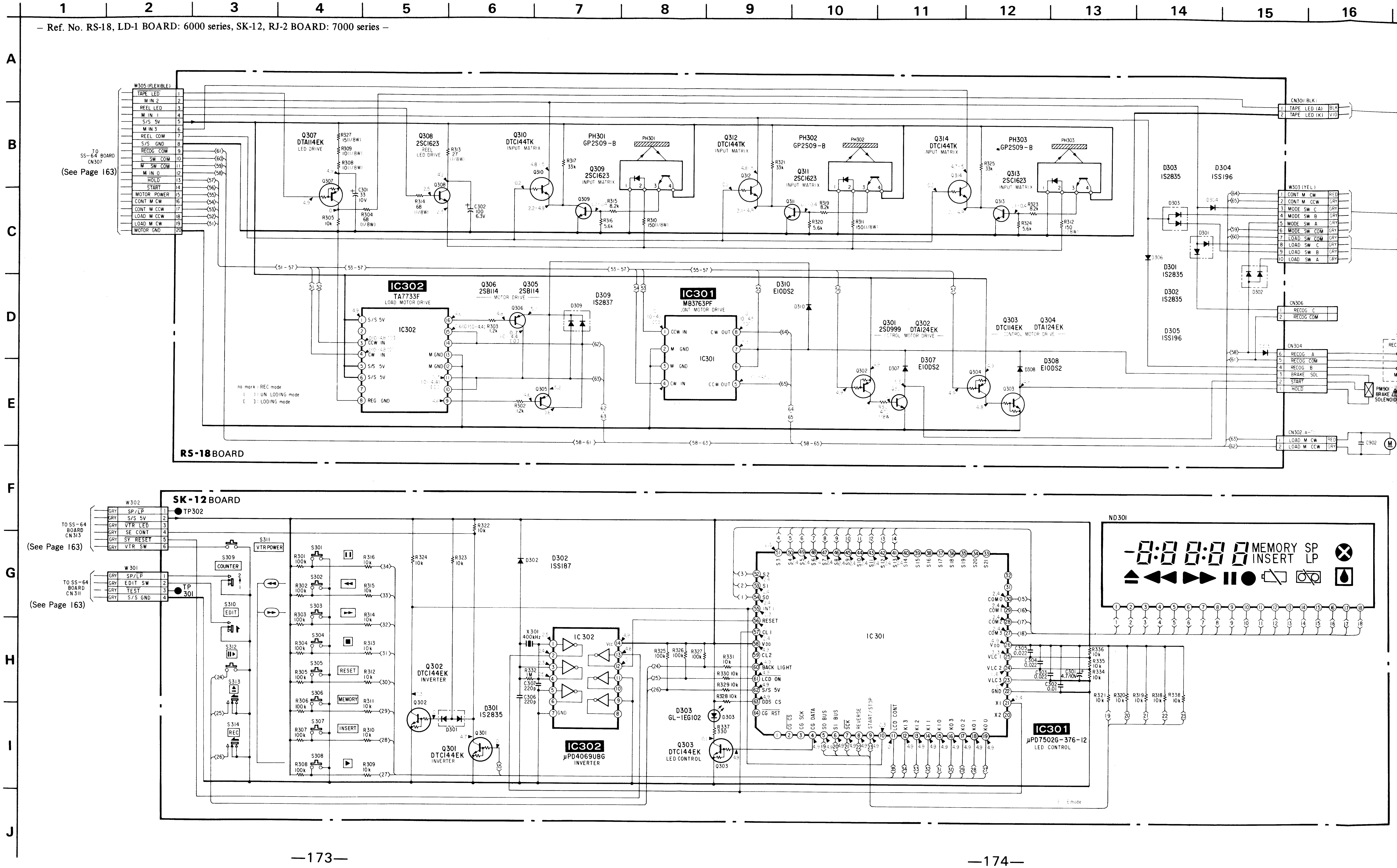
RJ-2 BOARD (SOLDER SIDE)


C932
0.01
D932
D931
D933
1-620-155-
11

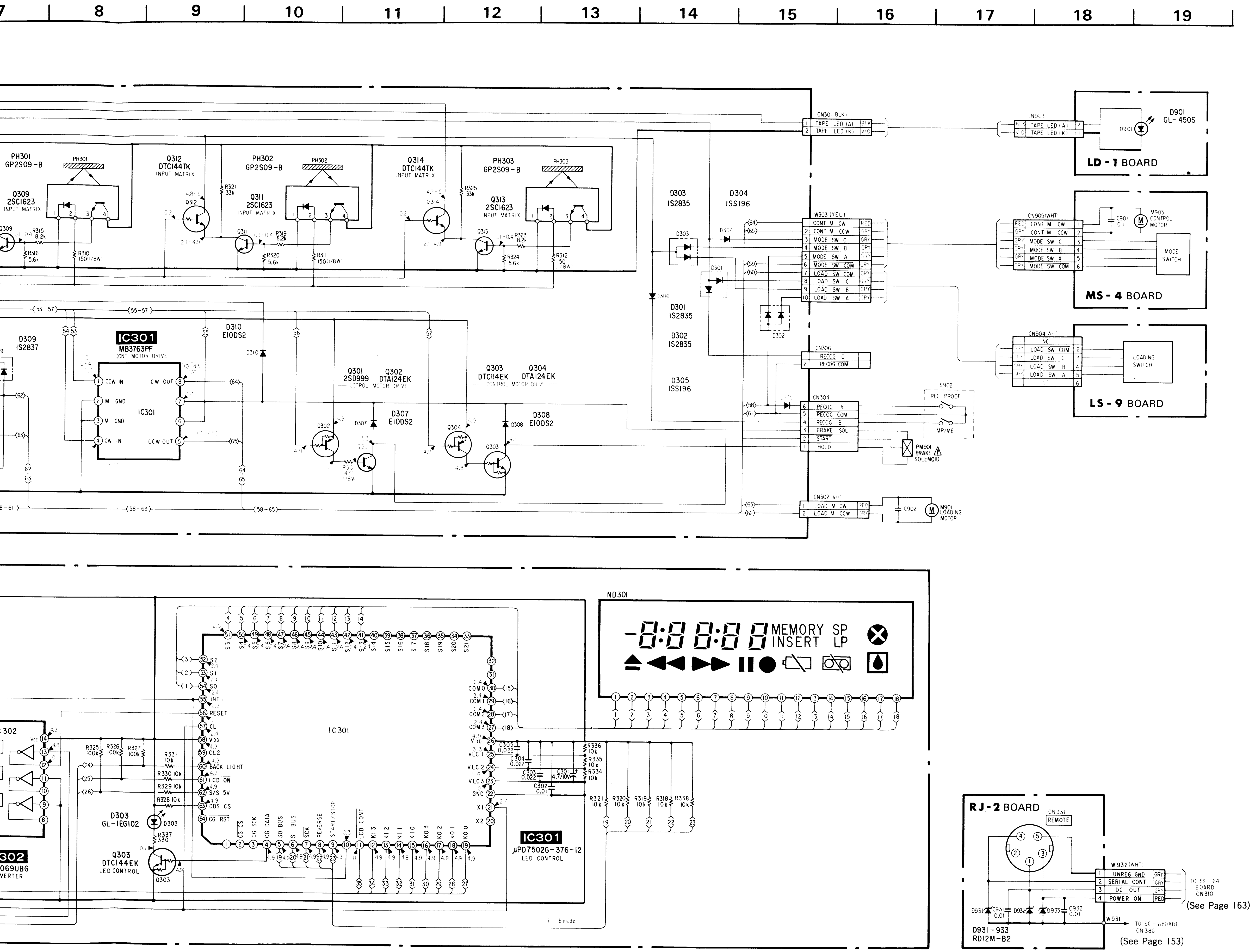
SERVO, MECHANISM CONTROL   SERVO, MECHANISM CONTROL

RS-18 (CONTROL/LOADING MOTOR, SOLENOID DRIVE), LS-9 (LOADING SWITCH), MS-4 (MODE SWITCH, CONTROL MOTOR), LD-1 (TAPE TOP/END LED), SK-12 (DISPLAY, FUNCTION CONTROL), RJ-2 (WIRED REMOTE CONTROL TERMINAL) SCHEMATI

– Ref. No. RS-18, LD-1 BOARD: 6000 series, SK-12, RJ-2 BOARD: 7000 series –


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
W305 (FLEXIBLE)
TAPE LED
M IN 2
REEL LED
M IN 1
S/S 5V
M IN 3
REEL COM
S/S GND
RECOG COM
L SW COM
M SW COM
M IN 0
HOLD
START
MOTOR POWER
CONT M CW
CONT M CCW
LOAD M CCW
LOAD M CW
MOTOR GND
TO SS-64 BOARD CN307
(See Page 163)
Q307 DTA114EK LED DRIVE
Q308 2SC1623 REEL LED DRIVE
Q310 DTC144TK INPUT MATRIX
PH301 GP2S09-B
Q309 2SC1623 INPUT MATRIX
Q312 DTC144TK INPUT MATRIX
PH302 GP2S09-B
Q311 2SC1623 INPUT MATRIX
Q314 DTC144TK INPUT MATRIX
PH303 GP2S09-B
Q313 2SC1623 INPUT MATRIX
D303 1S2835
D304 1SS196
D301 1S2835
D302 1S2835
D305 1SS196
CN301 (BLK)
TAPE LED (A)
TAPE LED (K)
W303 (YEL)
CONT M CW
CONT M CCW
MODE SW C
MODE SW B
MODE SW A
MODE SW COM
LOAD SW COM
LOAD SW C
LOAD SW B
LOAD SW A
CN306
RECOG C
RECOG COM
IC302 TA7733F LOAD MOTOR DRIVE
Q306 2SB1114
Q305 2SB1114
MOTOR DRIVE
D309 1S2837
IC301 MB3763PF CONT MOTOR DRIVE
D310 E10DS2
Q301 2SD999
Q302 DTA124EK
CONTROL MOTOR DRIVE
Q303 DTC114EK
Q304 DTA124EK
CONTROL MOTOR DRIVE
D307 E10DS2
D308 E10DS2
CN304
RECOG A
RECOG COM
RECOG B
BRAKE SOL
START
HOLD
PM901 BRAKE SOLENOID
CN302
LOAD M CW
LOAD M CCW
C902
M
no mark : REC mode
( ) : UN LODING mode
[ ] : LODING mode
RS-18 BOARD
SK-12 BOARD
W302
SP/LP
S/S 5V
VTR LED
SE CONT
SY RESET
VTR SW
TO SS-64 BOARD CN313
(See Page 163)
W301
SP/LP
EDIT SW
TEST
S/S GND
TO SS-64 BOARD CN311
(See Page 163)
TP302
TP 301
S309 COUNTER
S310 EDIT
S311 VTR POWER
S312
S313
S314 REC
S301 S302 S303 S304 S305 S306 S307 S308
RESET
MEMORY
INSERT
Q302 DTC144EK INVERTER
Q301 DTC144EK INVERTER
D301 1S2835
D302 1SS187
X301 400kHz
IC302 μPD4069UBG INVERTER
D303 GL-1EG102
Q303 DTC144EK LED CONTROL
IC301 μPD7502G-376-12 LED CONTROL
ND301
MEMORY SP
INSERT LP
RESET
BACK LIGHT
LCD ON
S/S 5V
DDS CS
CG RST
CG CS
CG SCK
CG DATA
SO BUS
SI BUS
SCK
REVERSE
START/STOP
LCD CONT
KI3 KI2 KI1 KI0 KO3 KO2 KO1 KO0

CH, CONTROL MOTOR), LD-1 (TAPE TOP/END LED), SK-12 (DISPLAY, FUNCTION CONTROL), RJ-2 (WIRED REMOTE CONTROL TERMINAL) SCHEMATIC DIAGRAM


7
8
9
10
11
12
13
14
15
16
17
18
19
PH301 GP2S09-B
Q309 2SC1623 INPUT MATRIX
Q312 DTC144TK INPUT MATRIX
R321 33k
PH302 GP2S09-B
Q311 2SC1623 INPUT MATRIX
R319 8.2k
R320 5.6k
R311 150(1/8W)
R315 8.2k
R316 5.6k
R310 150(1/8W)
Q314 DTC144TK INPUT MATRIX
R325 33k
PH303 GP2S09-B
Q313 2SC1623 INPUT MATRIX
R323 8.2k
R324 5.6k
R312 150 (1/8W)
D303 1S2835
D304 1SS196
D301 1S2835
D302 1S2835
D305 1SS196
D306
CN301 (BLK)
TAPE LED (A)
TAPE LED (K)
N901
D901 GL-450S
LD-1 BOARD
W303 (YEL)
CONT M CW
CONT M CCW
MODE SW C
MODE SW B
MODE SW A
MODE SW COM
LOAD SW COM
LOAD SW C
LOAD SW B
LOAD SW A
CN905 (WHT)
C901 0.1
M903 CONTROL MOTOR
MODE SWITCH
MS-4 BOARD
CN904
NC
LOADING SWITCH
LS-9 BOARD
CN306
RECOG C
RECOG COM
CN304
RECOG A
RECOG COM
RECOG B
BRAKE SOL
START
HOLD
S902
REC PROOF
MP/ME
PM901 BRAKE SOLENOID
CN302
LOAD M CW
LOAD M CCW
C902
M901 LOADING MOTOR
D309 1S2837
D310 E10DS2
IC301 MB3763PF CONT MOTOR DRIVE
CCW IN
CW OUT
M GND
CW IN
CCW OUT
Q301 2SD999
Q302 DTA124EK
CONTROL MOTOR DRIVE
Q303 DTC114EK
Q304 DTA124EK
CONTROL MOTOR DRIVE
D307 E10DS2
D308 E10DS2
IC301
IC 301
ND301
MEMORY SP
INSERT LP
COM0
COM1
COM2
COM3
VDD
VLC1
VLC2
VLC3
GND
X1
X2
S1
SO
INT
RESET
CL1
VDD
CL2
BACK LIGHT
LCD ON
S/S 5V
DDS CS
CG RST
CG CS
CG SCK
CG DATA
S1 BUS
S0 BUS
SCK
REVERSE
START/STOP
LCD CONT
R325 100k
R326 100k
R327 100k
R331 10k
R330 10k
R329 10k
R328 10k
D303 GL-1EG102
R337 330
Q303 DTC144EK LED CONTROL
302
069UBG
VERTER
C305 0.022
C304 0.022
C303 0.022
C301 4.7/10V
C302 0.01
R336 10k
R335 10k
R334 10k
R321 10k
R320 10k
R319 10k
R318 10k
R338 10k
IC301 μPD7502G-376-12 LED CONTROL
RJ-2 BOARD
CN931 REMOTE
W932 (WHT)
UNREG GND
SERIAL CONT
DC OUT
POWER ON
TO SS-64 BOARD CN310
(See Page 163)
W931
TO SC-68 BOARD CN386
(See Page 153)
D931–933 RD12M-B2
C931 0.01
C932 0.01

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.

- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.

- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10MΩ)

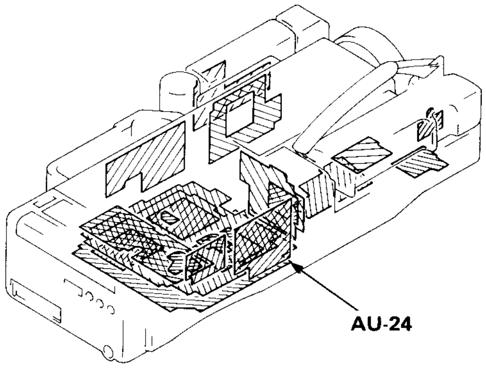
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Note (Printed Wiring Board):

- ⊗ : **mark is through hole.**
- ○— : lead wire attached to the **component side.**
- ●— : lead wire attached to the **soldering side.**
- ▒ : pattern from the side which enables seeing.
- ░ : pattern of the rear side
- ▨ : B+ Pattern.
- Digital transistor (AU-24: Q402, 404, 412, 414) transistor with resistors.
  Refer to the AU-24 board schematic diagram for digital transistor.

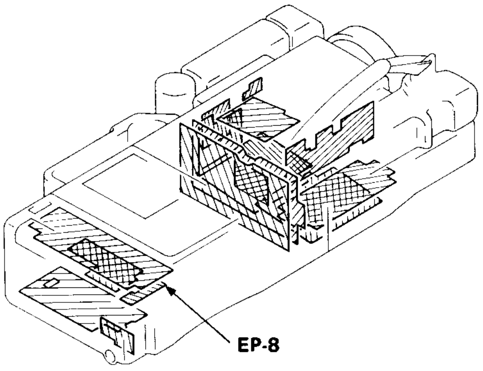


Note

Soldering side:	**Parts on the soldering side being seen from the soldering are stated.**
Component side:	**Parts on the component side being seen from the component are stated.**

Regarding color indication of patterns

- * **Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).**
- * **Pattern being seen in the state of the rear surface side is indicated in green pattern.**



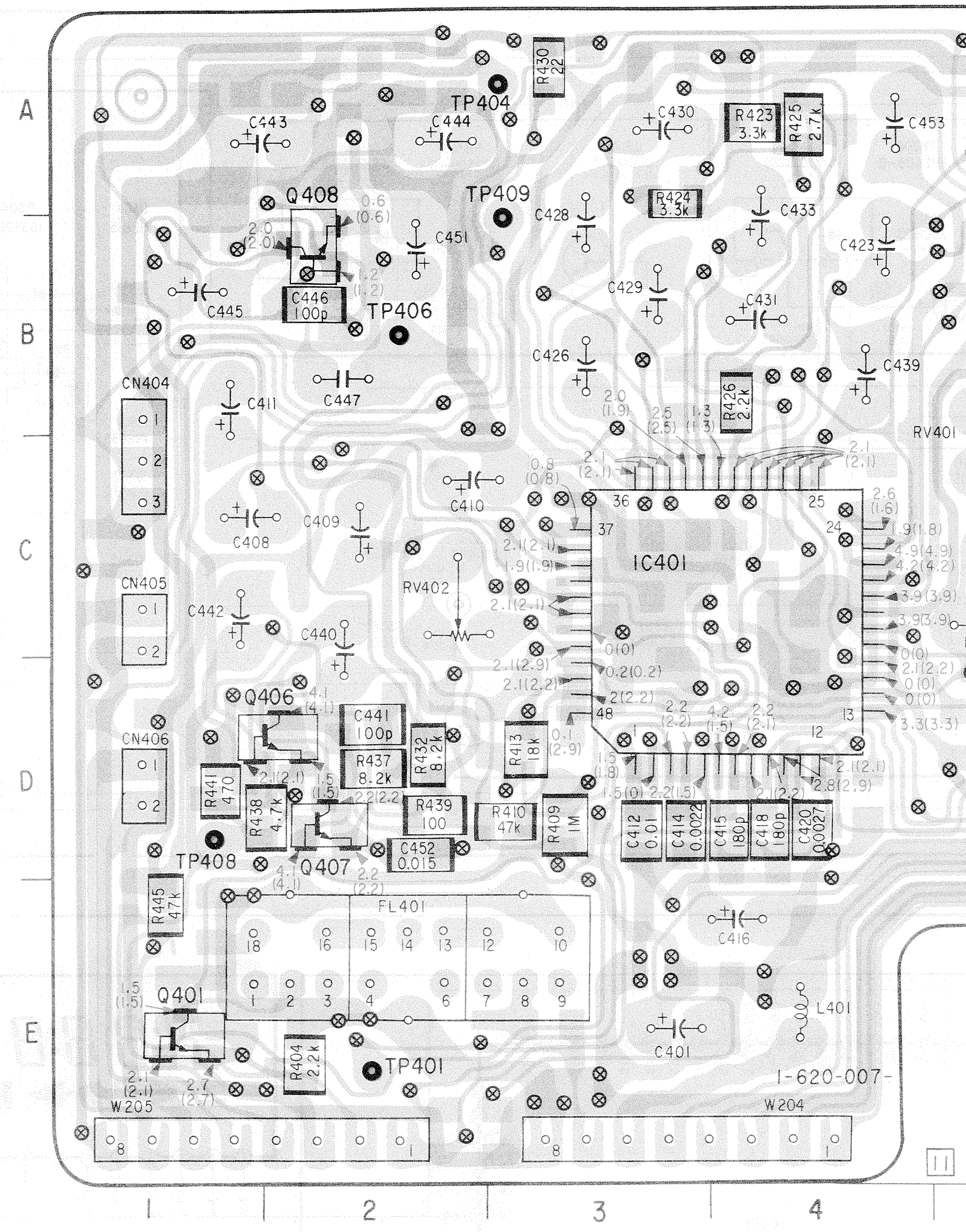
AU-24 (AUDIO SIGNAL PROCESS), EP-8 (EARPHONE JACK) PRINTED WIRING BOARD

– Ref. No. AU-24, EP-8 BOARD: 8000 series –

IC401	C-4
Q401	E-1
Q402	D-9
Q403	D-10
Q404	B-7
Q405	D-10
Q406	D-2
Q407	D-2
Q408	B-2
Q409	B-11
Q410	D-7
Q411	D-7
Q412	D-7
Q413	A-11
Q414	E-7
TP401	E-2
TP404	A-3
TP406	B-2
TP408	D-1
TP409	B-3
TP410	C-5
RV401	C-5
RV402	C-2
RV403	C-5

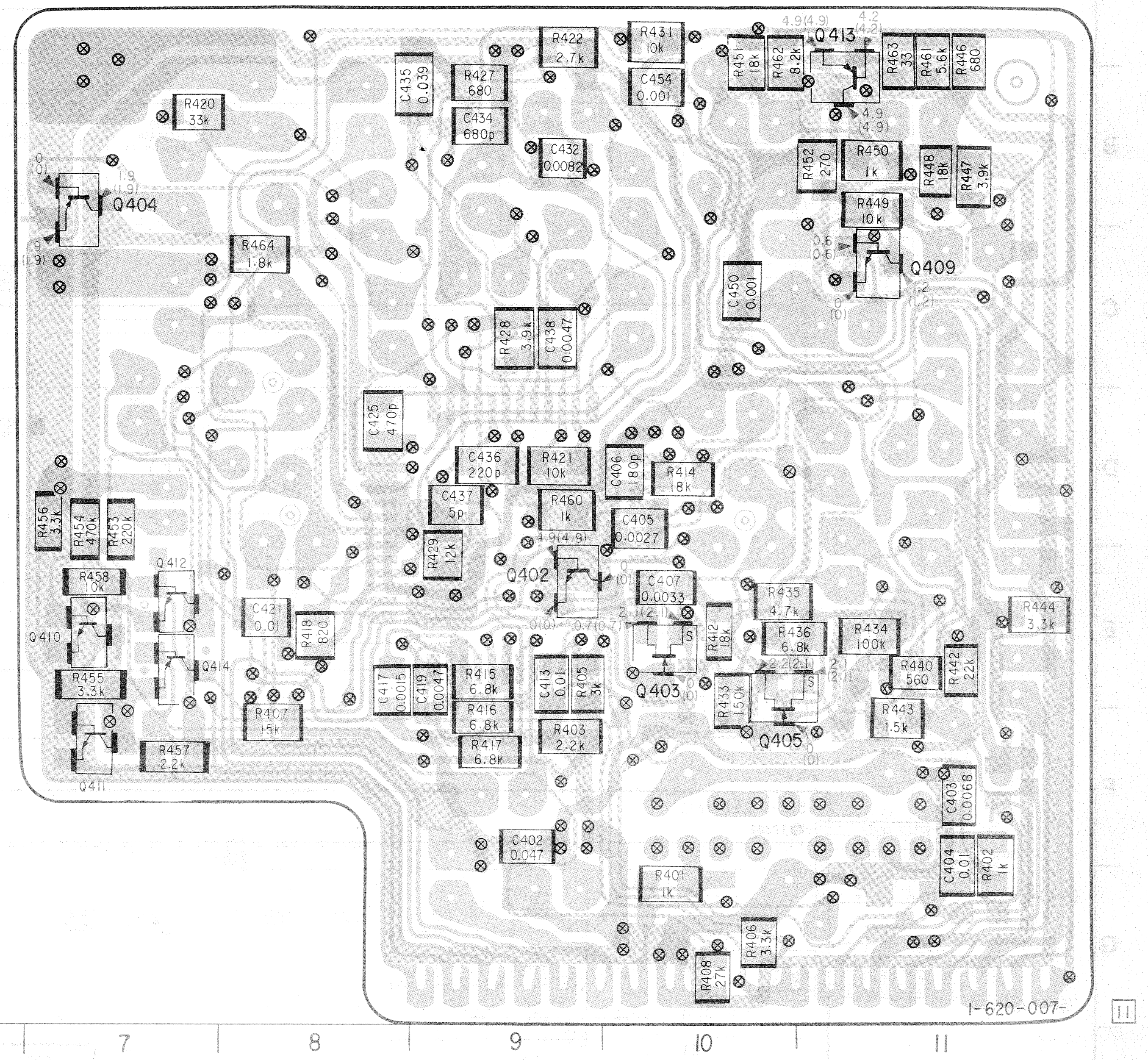
AU-24 BOARD (COMPONENT SIDE)

no mark : REC mode
( ) : PB mode

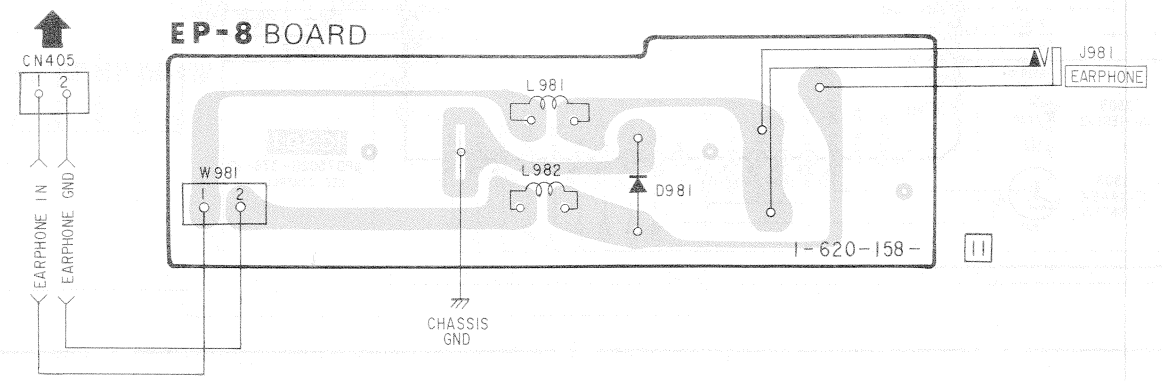

A
B
C
D
E
1
2
3
4
5
IC401
Q401
Q406
Q407
Q408
TP401
TP404
TP406
TP408
TP409
TP410
RV401
RV402
RV403
CN403
CN404
CN405
CN406
FL401
L401
L402
W204
W205
1-620-007-
11

AU-24 BOARD (SOLDER SIDE)

no mark : REC mode
( ) : PB mode

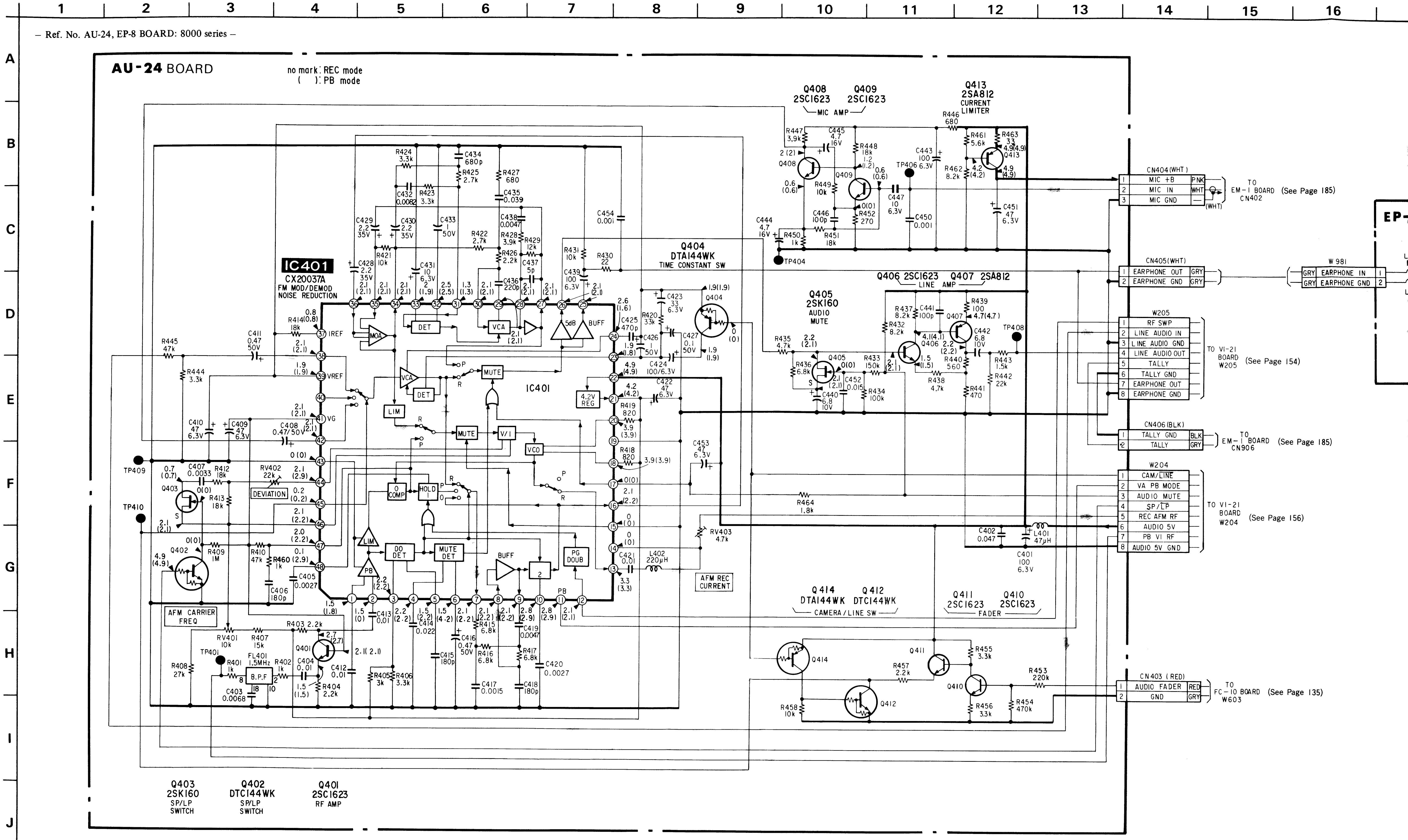

6
7
8
9
10
11
Q402
Q403
Q404
Q405
Q409
Q410
Q411
Q412
Q413
Q414
1-620-007-
11

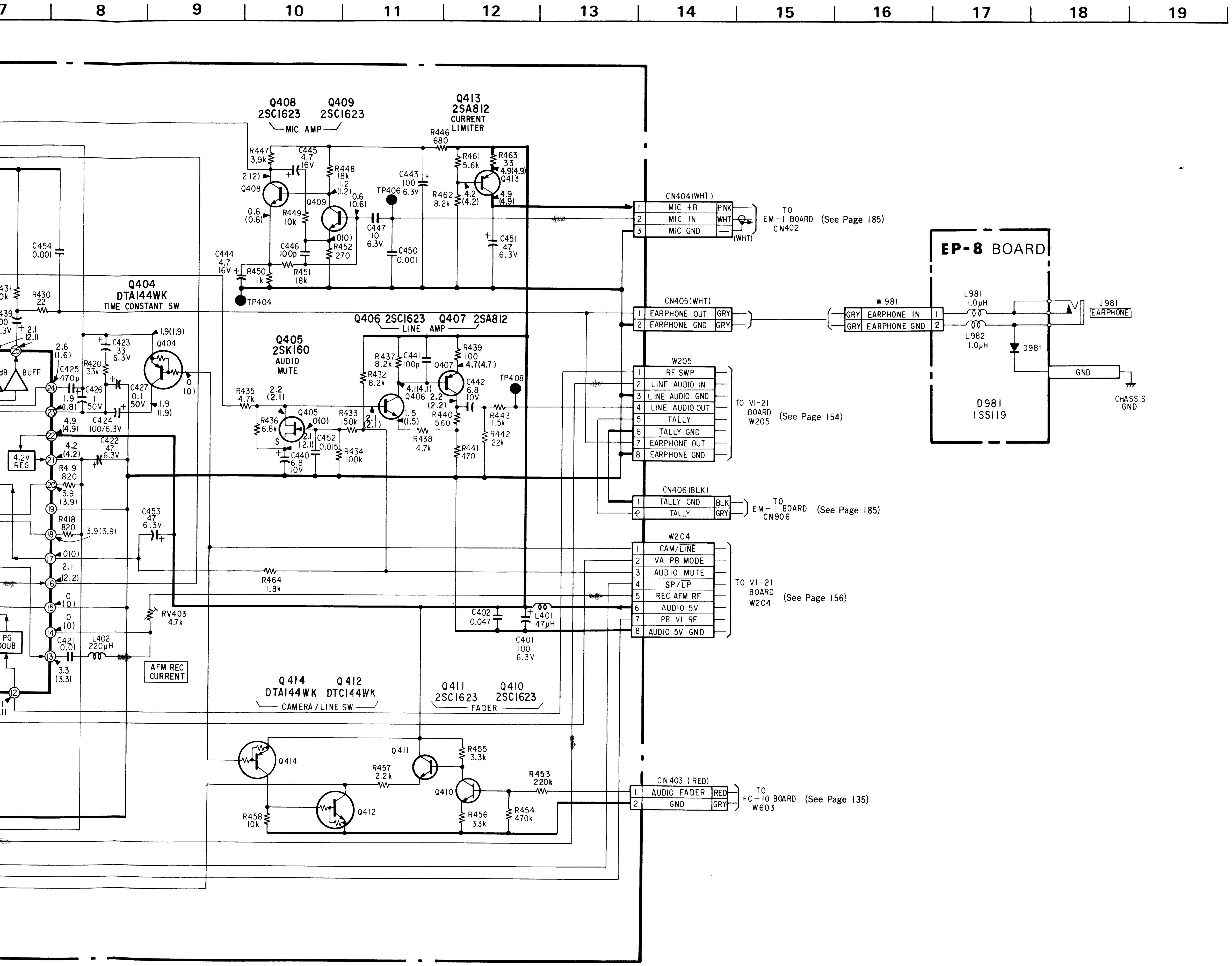
EP-8 BOARD


CN405
1 2
EARPHONE IN
EARPHONE GND
W981
L981
L982
D981
J981
EARPHONE
CHASSIS GND
1-620-158-
11

AU-24 (AUDIO SIGNAL PROCESS), EP-8 (EARPHONE JACK) SCHEMATIC DIAGRAM

– Ref. No. AU-24, EP-8 BOARD: 8000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
AU-24 BOARD
no mark: REC mode
( ): PB mode
IC401
CX20037A
FM MOD/DEMOD
NOISE REDUCTION
Q408 2SC1623
Q409 2SC1623
MIC AMP
Q413 2SA812
CURRENT LIMITER
Q404 DTA144WK
TIME CONSTANT SW
Q405 2SK160
AUDIO MUTE
Q406 2SC1623
Q407 2SA812
LINE AMP
CN404 (WHT)
MIC +B
MIC IN
MIC GND
PNK
WHT
(WHT)
TO EM-1 BOARD CN402 (See Page 185)
CN405 (WHT)
EARPHONE OUT
EARPHONE GND
GRY
W981
EARPHONE IN
EARPHONE GND
EP-
W205
RF SWP
LINE AUDIO IN
LINE AUDIO GND
LINE AUDIO OUT
TALLY
TALLY GND
EARPHONE OUT
EARPHONE GND
TO VI-21 BOARD W205 (See Page 154)
CN406 (BLK)
TALLY GND
TALLY
BLK
TO EM-1 BOARD CN906 (See Page 185)
W204
CAM/LINE
VA PB MODE
AUDIO MUTE
SP/LP
REC AFM RF
AUDIO 5V
PB VI RF
AUDIO 5V GND
TO VI-21 BOARD W204 (See Page 156)
CN403 (RED)
AUDIO FADER
GND
RED
TO FC-10 BOARD W603 (See Page 135)
Q414 DTA144WK
Q412 DTC144WK
CAMERA/LINE SW
Q411 2SC1623
Q410 2SC1623
FADER
Q403 2SK160
SP/LP SWITCH
Q402 DTC144WK
SP/LP SWITCH
Q401 2SC1623
RF AMP
TP401
TP404
TP406
TP408
TP409
TP410
MOA
DET
VCA
5dB
BUFF
LIM
MUTE
V/I
VCO
4.2V REG
O COMP
HOLD
DO DET
MUTE DET
PB
PG DOUB
AFM REC CURRENT
AFM CARRIER FREQ
DEVIATION
B.P.F
FL401 1.5MHz
L401 47μH
L402 220μH
RV401 10k
RV402 22k
RV403 4.7k
IREF
VREF
VG


7
8
9
10
11
12
13
14
15
16
17
18
19
Q408 2SC1623
Q409 2SC1623
MIC AMP
Q413 2SA812
CURRENT LIMITER
Q404 DTA144WK
TIME CONSTANT SW
Q405 2SK160
AUDIO MUTE
Q406 2SC1623
Q407 2SA812
LINE AMP
Q414 DTA144WK
Q412 DTC144WK
CAMERA / LINE SW
Q411 2SC1623
Q410 2SC1623
FADER
TP404
TP406
TP408
4.2V REG
BUFF
PG DOUB
AFM REC CURRENT
RV403 4.7k
L401 47μH
L402 220μH
CN404 (WHT)
1 MIC +B PNK
2 MIC IN WHT
3 MIC GND
TO EM-1 BOARD CN402 (See Page 185)
CN405 (WHT)
1 EARPHONE OUT GRY
2 EARPHONE GND GRY
W205
1 RF SWP
2 LINE AUDIO IN
3 LINE AUDIO GND
4 LINE AUDIO OUT
5 TALLY
6 TALLY GND
7 EARPHONE OUT
8 EARPHONE GND
TO VI-21 BOARD W205 (See Page 154)
CN406 (BLK)
1 TALLY GND BLK
2 TALLY GRY
TO EM-1 BOARD CN906 (See Page 185)
W204
1 CAM/LINE
2 VA PB MODE
3 AUDIO MUTE
4 SP/LP
5 REC AFM RF
6 AUDIO 5V
7 PB VI RF
8 AUDIO 5V GND
TO VI-21 BOARD W204 (See Page 156)
CN403 (RED)
1 AUDIO FADER RED
2 GND GRY
TO FC-10 BOARD W603 (See Page 135)
EP-8 BOARD
W981
GRY EARPHONE IN 1
GRY EARPHONE GND 2
L981 1.0μH
L982 1.0μH
D981
D981 1SS119
J981 EARPHONE
GND
CHASSIS GND

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have, characteristics curve B, which definition is omitted.
- ▭ : panel designation.
- ▭ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10MΩ)

When indicating parts by reference number, please include the board name.

- **Signal path**

ELECTRONIC VIEW FINDER

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the **component side.**
- ●— : lead wire attached to the **soldering side.**
- ▨ : pattern from the side which enables seeing.
- ░ : pattern of the rear side
- ▩ : B+ Pattern.

- Digital transistor (EM-1: Q901, 905, 906) transistor with resistors.
  Refer to the EM-1 board schematic diagram for digital transistor.

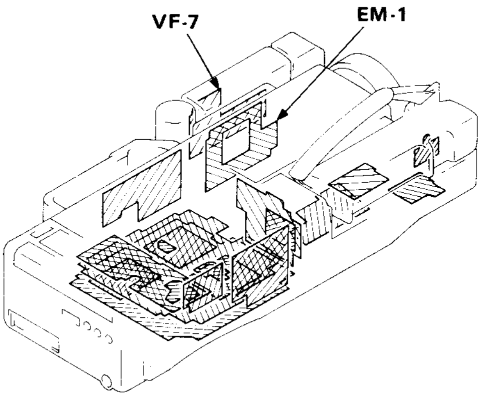
Note

Soldering side:	**Parts on the soldering side being seen from the soldering are stated.**
Component side:	**Parts on the component side being seen from the component are stated.**

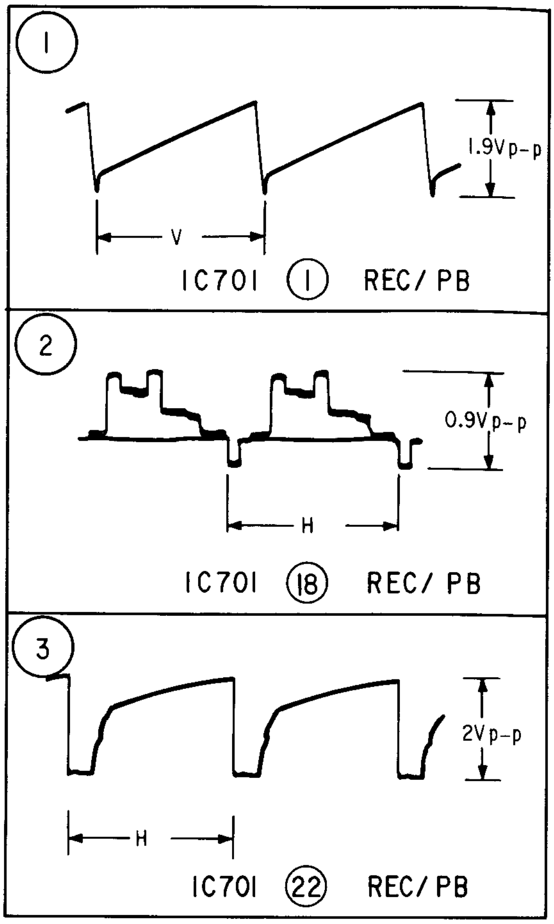
Regarding color indication of patterns

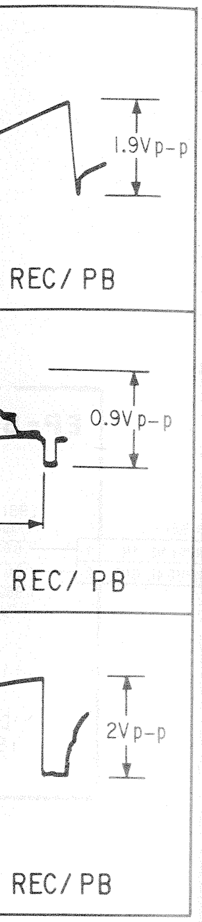
*** Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).**

*** Pattern being seen in the state of the rear surface side is indicated in green pattern.**



VF-7 BOARD





VF-7 (VIEW FINDER PROCESS), EM-1 (MIC AMP, VIEW FINDER RELAY) PRINTED WIRING BOARD

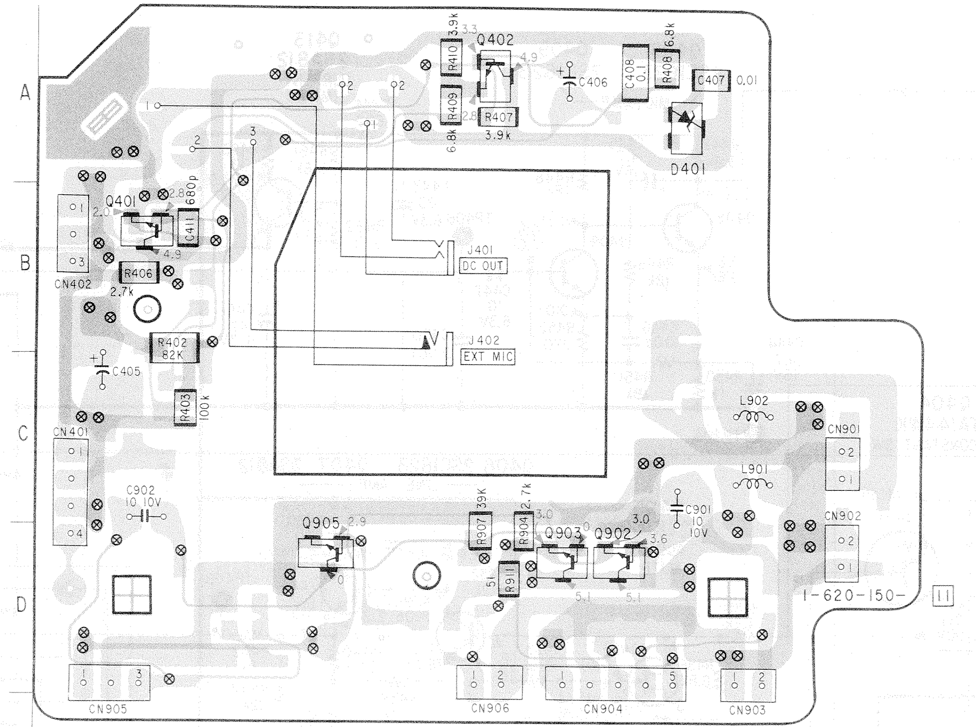
– Ref. No. VF-7, EM-1 BOARD: 9000 series –

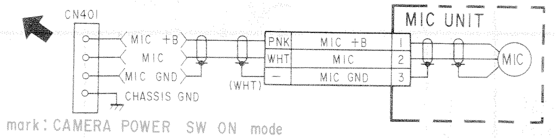
EM-1 BOARD

D401	A - 4
D403	I - 1
Q401	B - 1
Q402	A - 3
Q901	G - 4
Q902	D - 4
Q903	D - 3
Q905	D - 2
Q906	F - 2

EM-1 BOARD (COMPONENT SIDE)

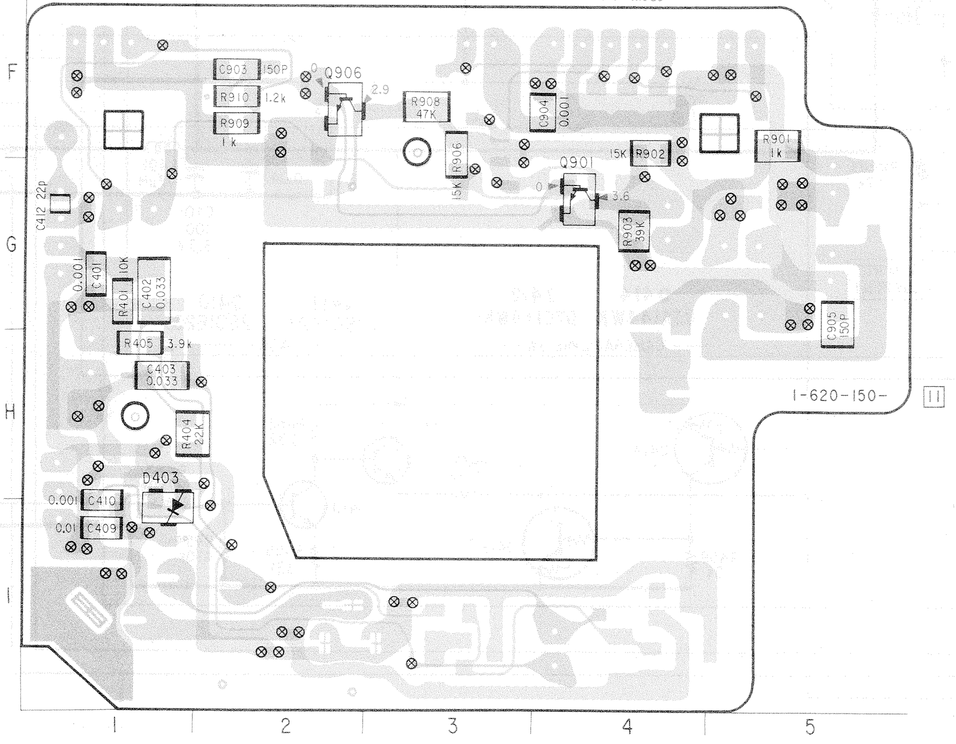
no mark : CAMERA POWER SW ON mode


A
B
C
D
Q402
R410 3.9k
R409 6.8k
R407 3.9k
C406
C408 0.1
R408 6.8k
C407 0.01
D401
Q401
C411 680p
R406 2.7k
CN402
J401 DC OUT
J402 EXT MIC
R402 82K
R403 100k
C405
CN401
C902 10 10V
L902
L901
CN901
CN902
Q905
R907 39K
R904 2.7k
Q903
Q902
C901 10 10V
R911
CN905
CN906
CN904
CN903
1-620-150-
11


E
CN401
MIC +B
MIC
MIC GND
CHASSIS GND
PNK
WHT
(WHT)
MIC UNIT
MIC

EM-1 BOARD (SOLDER SIDE)

no mark : CAMERA POWER SW ON mode

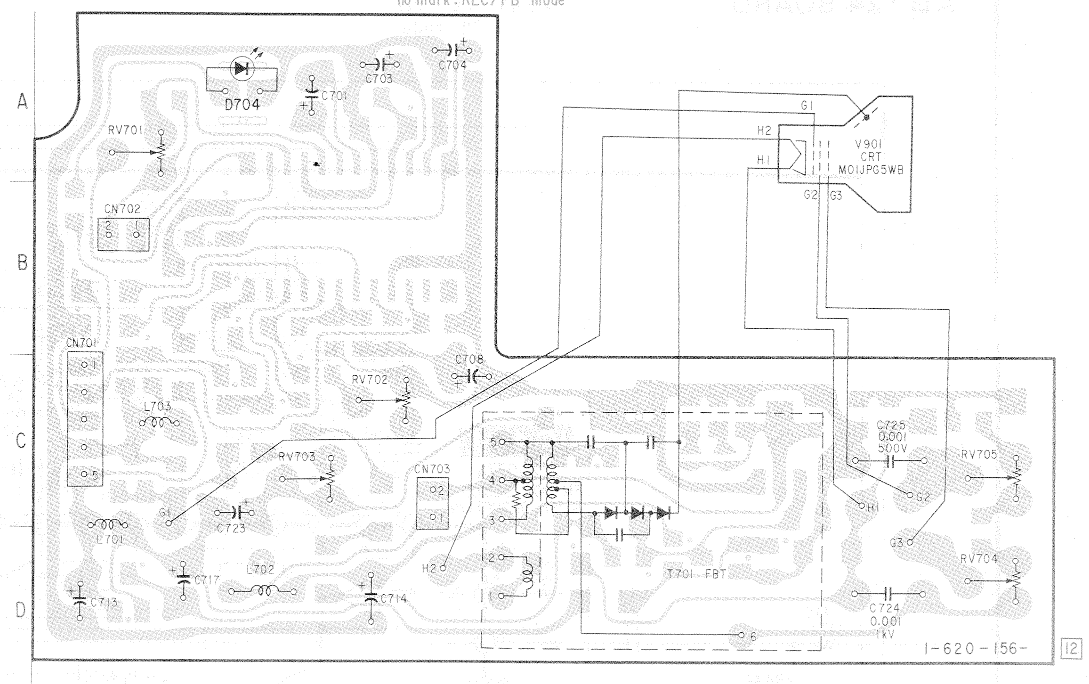

F
G
H
I
C903 150P
R910 1.2k
R909 1k
Q906
R908 47K
C904 0.001
R906 15k
Q901
R902 15K
R903 3.9K
R901 1k
C412 22p
C401 0.001
R401 10k
C402 0.033
R405 3.9k
C403 0.033
R404 22K
C905 150P
D403
C410 0.001
C409 0.01
1-620-150-
11
1
2
3
4
5

VF-7 BOARD

D701	F - 4
D702	F - 4
D703	F - 1
D704	A - 2
IC701	G - 2
Q701	G - 2
Q702	E - 1
Q703	F - 5
Q704	F - 5
RV701	A - 1
RV702	C - 3
RV703	C - 2
RV704	D - 6
RV705	C - 6

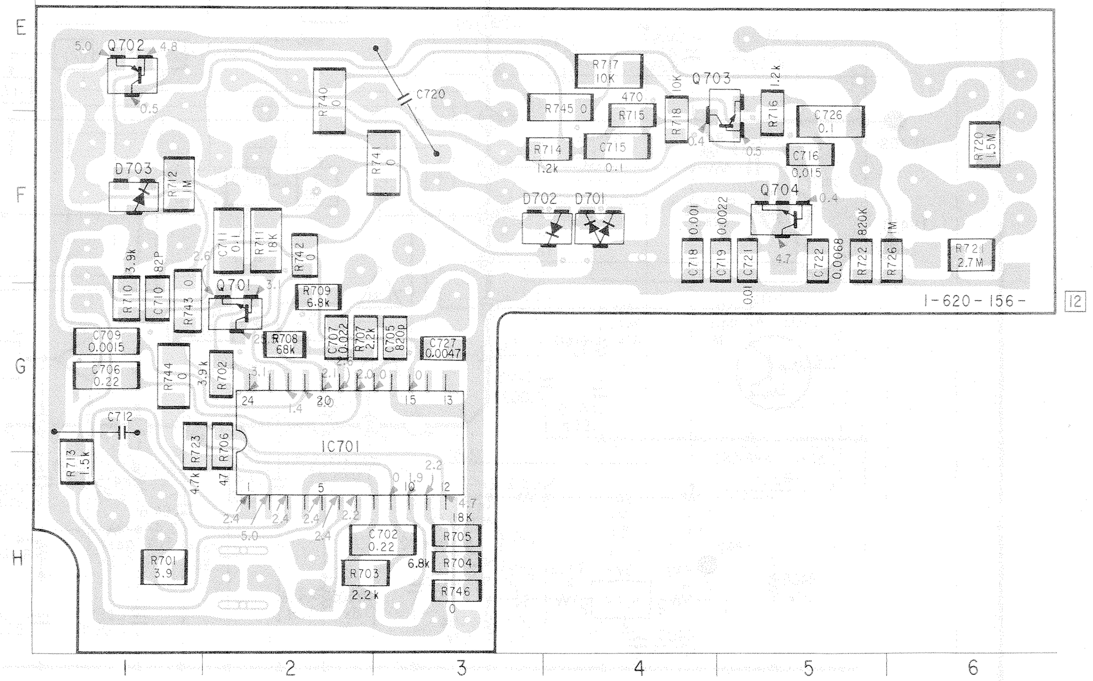
VF-7 BOARD (COMPONENT SIDE)

no mark : REC/PB mode


A
B
C
D
D704
C701
C703
C704
RV701
CN702
CN701
V901 CRT M01JPG5WB
G1
G2
G3
H1
H2
C708
RV702
L703
RV703
CN703
C723
L701
C717
L702
C714
C713
T701 FBT
C725 0.001 500V
RV705
RV704
C724 0.001 1kV
1-620-156-
12

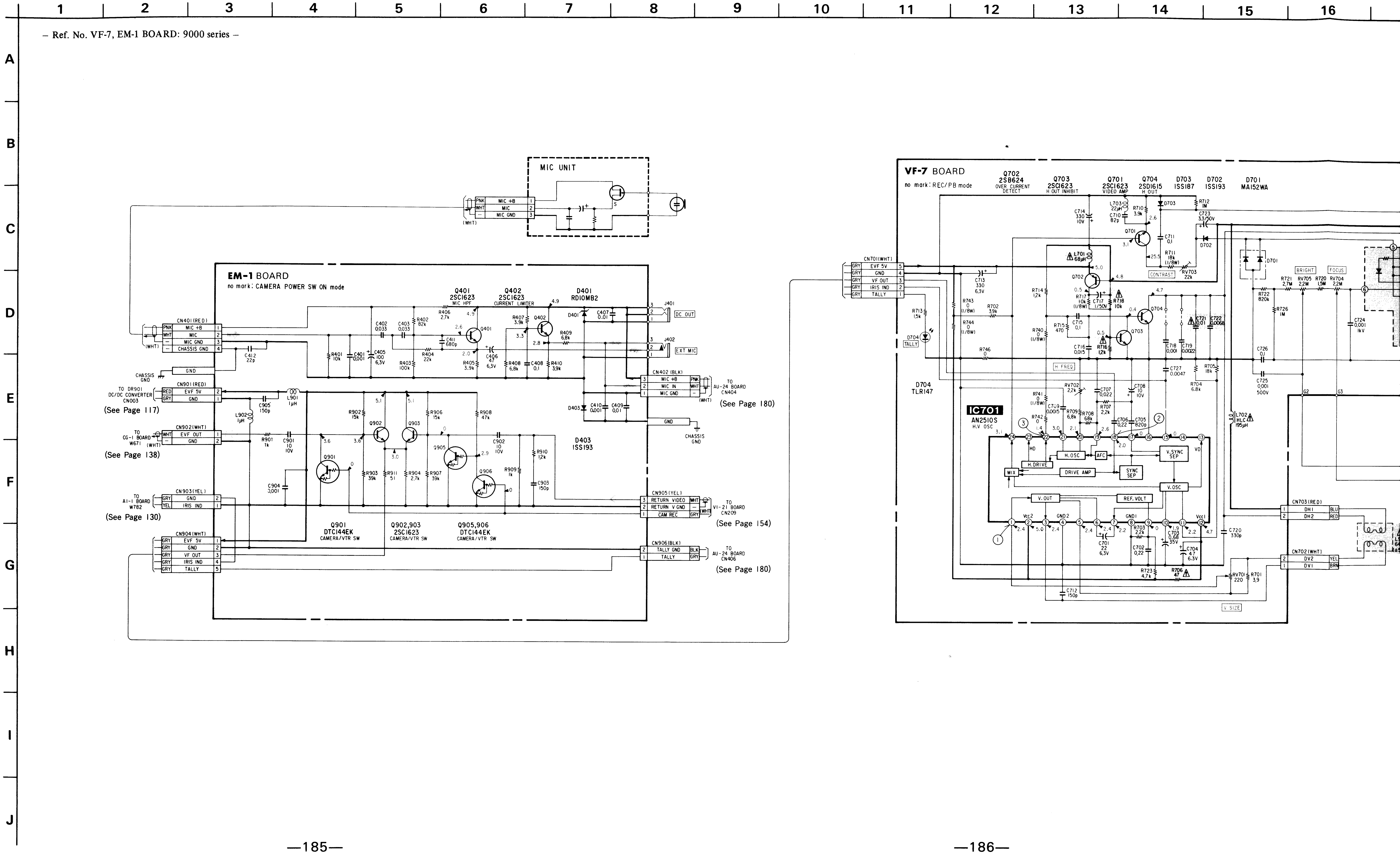
VF-7 BOARD (SOLDER SIDE)

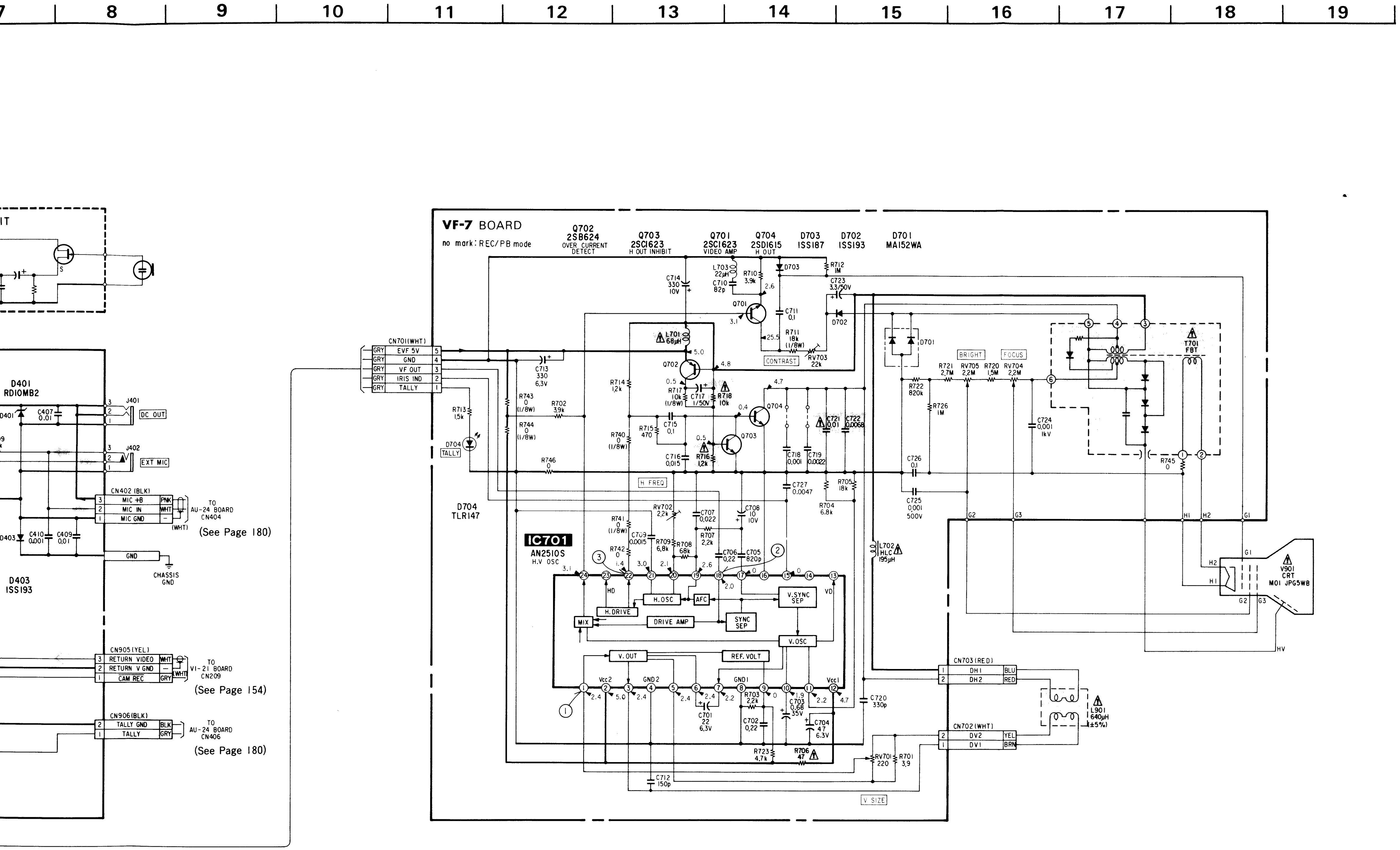
no mark : REC/PB mode


E
F
G
H
Q702
C720
R740
R741
R717 10K
R745
R715
R718
Q703
R716 1.2k
C726 0.1
R714 1.2k
C715 0.1
C716 0.015
R720 1.5M
D703
R712 1M
D702
D701
Q704
C718 0.001
C719 0.0022
C721 0.01
C722 0.0068
R722 820K
R726 1M
R721 2.7M
R710
R711
R743
Q701
R742
R709 6.8k
R708 68k
C705 0.0015
C706 0.22
R744
R702
C707 0.022
R707 1.2k
C711 8200
C727 0.0047
C712
R713 1.5k
R723 4.7k
R706 47
IC701
C702 0.22
R705 18K
R704
R703 2.2k
R746
R701 3.9
1-620-156-
12
1
2
3
4
5
6

VF-7 (VIEW FINDER PROCESS), EM-1 (MIC AMP, VIEW FINDER RELAY) SCHEMATIC DIAGRAM

– Ref. No. VF-7, EM-1 BOARD: 9000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
MIC UNIT
MIC +B
MIC
MIC GND
(WHT)
EM-1 BOARD
no mark: CAMERA POWER SW ON mode
Q401 2SC1623 MIC HPF
Q402 2SC1623 CURRENT LIMITER
D401 RD10MB2
CN401 (RED)
MIC +B
MIC
MIC GND
CHASSIS GND
CHASSIS GND
GND
TO DR901 DC/DC CONVERTER CN003
(See Page 117)
CN901 (RED)
EVF 5V
GND
TO CG-1 BOARD W671
CN902 (WHT)
EVF OUT
GND
(See Page 138)
TO AI-1 BOARD W782
CN903 (YEL)
GND
IRIS IND
(See Page 130)
CN904 (WHT)
EVF 5V
GND
VF OUT
IRIS IND
TALLY
J401
DC OUT
J402
EXT MIC
CN402 (BLK)
MIC +B
MIC IN
MIC GND
TO AU-24 BOARD CN404
(See Page 180)
CHASSIS GND
D403 1SS193
CN905 (YEL)
RETURN VIDEO
RETURN V GND
CAM REC
TO VI-21 BOARD CN209
(See Page 154)
CN906 (BLK)
TALLY GND
TALLY
TO AU-24 BOARD CN406
(See Page 180)
Q901 DTC144EK CAMERA/VTR SW
Q902,903 2SC1623 CAMERA/VTR SW
Q905,906 DTC144EK CAMERA/VTR SW
VF-7 BOARD
no mark: REC/PB mode
Q702 2SB624 OVER CURRENT DETECT
Q703 2SC1623 H OUT INHIBIT
Q701 2SC1623 VIDEO AMP
Q704 2SD1615 H OUT
D703 1SS187
D702 1SS193
D701 MA152WA
CN701 (WHT)
EVF 5V
GND
VF OUT
IRIS IND
TALLY
D704 TLR147
TALLY
CONTRAST
BRIGHT
FOCUS
H FREQ
IC701 AN2510S H.V OSC
H.OSC
AFC
V.SYNC SEP
SYNC SEP
H.DRIVE
DRIVE AMP
MIX
V.OSC
V.OUT
REF.VOLT
Vcc2
GND2
GND1
Vcc1
L702 HLC 195μH
CN703 (RED)
DH1
DH2
CN702 (WHT)
DV2
DV1
V SIZE


7
8
9
10
11
12
13
14
15
16
17
18
19
IT
D401
RD10MB2
C407 0.01
J401
DC OUT
J402
EXT MIC
CN402 (BLK)
MIC +B
MIC IN
MIC GND
PNK
WHT
(WHT)
TO AU-24 BOARD CN404
(See Page 180)
C410 0.001
C409 0.01
GND
CHASSIS GND
D403
ISS193
CN905 (YEL)
RETURN VIDEO
RETURN V GND
CAM REC
GRY
TO VI-21 BOARD CN209
(See Page 154)
CN906 (BLK)
TALLY GND
TALLY
BLK
TO AU-24 BOARD CN406
(See Page 180)
VF-7 BOARD
no mark: REC/PB mode
Q702 2SB624 OVER CURRENT DETECT
Q703 2SC1623 H OUT INHIBIT
Q701 2SC1623 VIDEO AMP
Q704 2SD1615 H OUT
D703 ISS187
D702 ISS193
D701 MA152WA
CN701 (WHT)
EVF 5V
GND
VF OUT
IRIS IND
TALLY
C713 330 6.3V
R713 1.5k
D704 TALLY
D704 TLR147
R743 0 (1/8W)
R744 0 (1/8W)
R702 3.9k
R746 0
C714 330 10V
L701 68μH
L703 22μH
C710 82p
R710 3.9k
C711 0.1
R711 18k (1/8W)
RV703 22k
CONTRAST
R712 1M
C723 3.3/50V
R714 1.2k
R717 10k (1/8W)
C717 1/50V
R718 10k
R740 0 (1/8W)
R715 470
C715 0.1
C716 0.015
R716 1.2k
C718 0.001
C719 0.0022
C721 0.01
C722 0.0068
C727 0.0047
R704 6.8k
R705 18k
H FREQ
R722 820k
R726 1M
R721 2.7M
RV705 2.2M
R720 1.5M
RV704 2.2M
BRIGHT
FOCUS
C724 0.001 1kV
C726 0.1
C725 0.001 500V
T701 FBT
R745 0
G1
G2
G3
H1
H2
HV
V901 CRT M01 JPG5WB
L702 HLC 195μH
IC701
AN2510S
H.V OSC
RV702 2.2k
R741 0 (1/8W)
R742 0
C709 0.0015
R709 6.8k
R708 68k
R707 2.2k
C707 0.022
C708 10 10V
C706 0.22
C705 820p
H.OSC
AFC
V.SYNC SEP
H.DRIVE
MIX
DRIVE AMP
SYNC SEP
V.OSC
V.OUT
REF.VOLT
HD
VD
Vcc2
GND2
GND1
Vcc1
C701 22 6.3V
R703 2.2k
C702 0.22
C703 0.68 35V
C704 47 6.3V
R723 4.7k
R706 47
C712 150p
C720 330p
RV701 220
R701 3.9
V SIZE
CN703 (RED)
DH1
DH2
BLU
RED
CN702 (WHT)
DV2
DV1
YEL
BRN
L901 640μH ±5%

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ▭ : panel designation.
- ▭ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10MΩ)

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- **Signal path**

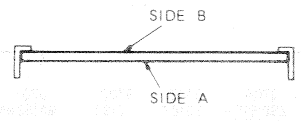
PB Y SIGNAL

PB Y & CHROMA SIGNAL

DT-61 (TIMING GENERATOR, REGISTER DRIVE) PRINTED WIRING BOARD

Note (Printed Wiring Board):

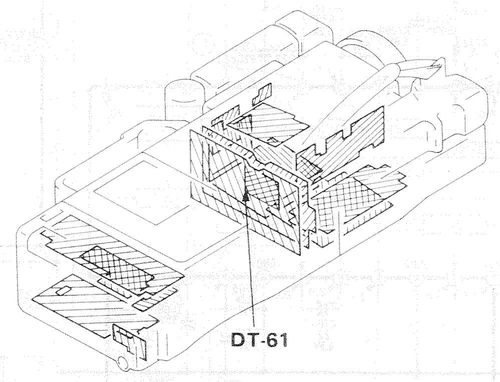
- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- ▨ : printing resistance.


SIDE B
SIDE A

Note	
Soldering side: (SIDE A)	Parts on the soldering side being seen from the soldering are stated.
Component side: (SIDE B)	Parts on the component side being seen from the component are stated.

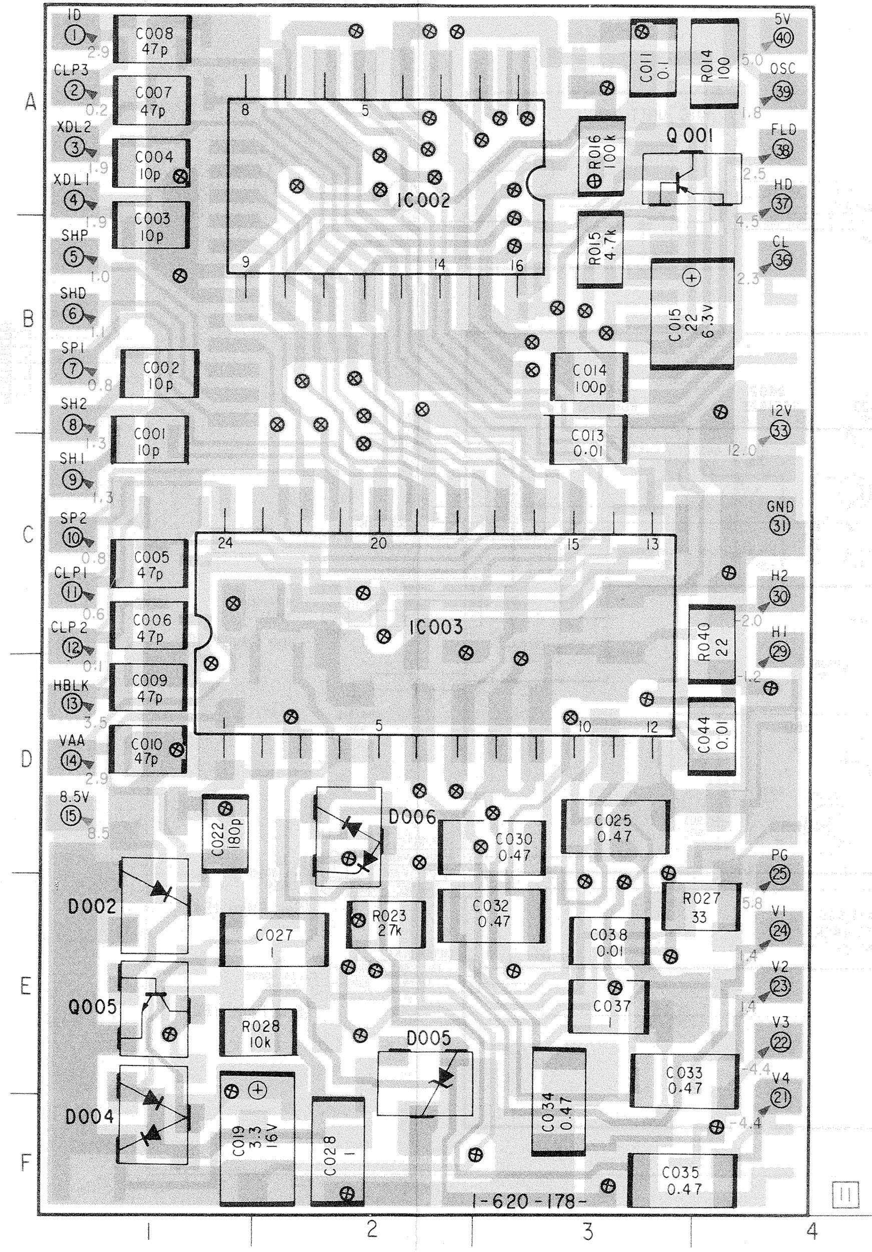
Regarding color indication of patterns

* Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
* Pattern being seen in the state of the rear surface side is indicated in green pattern.

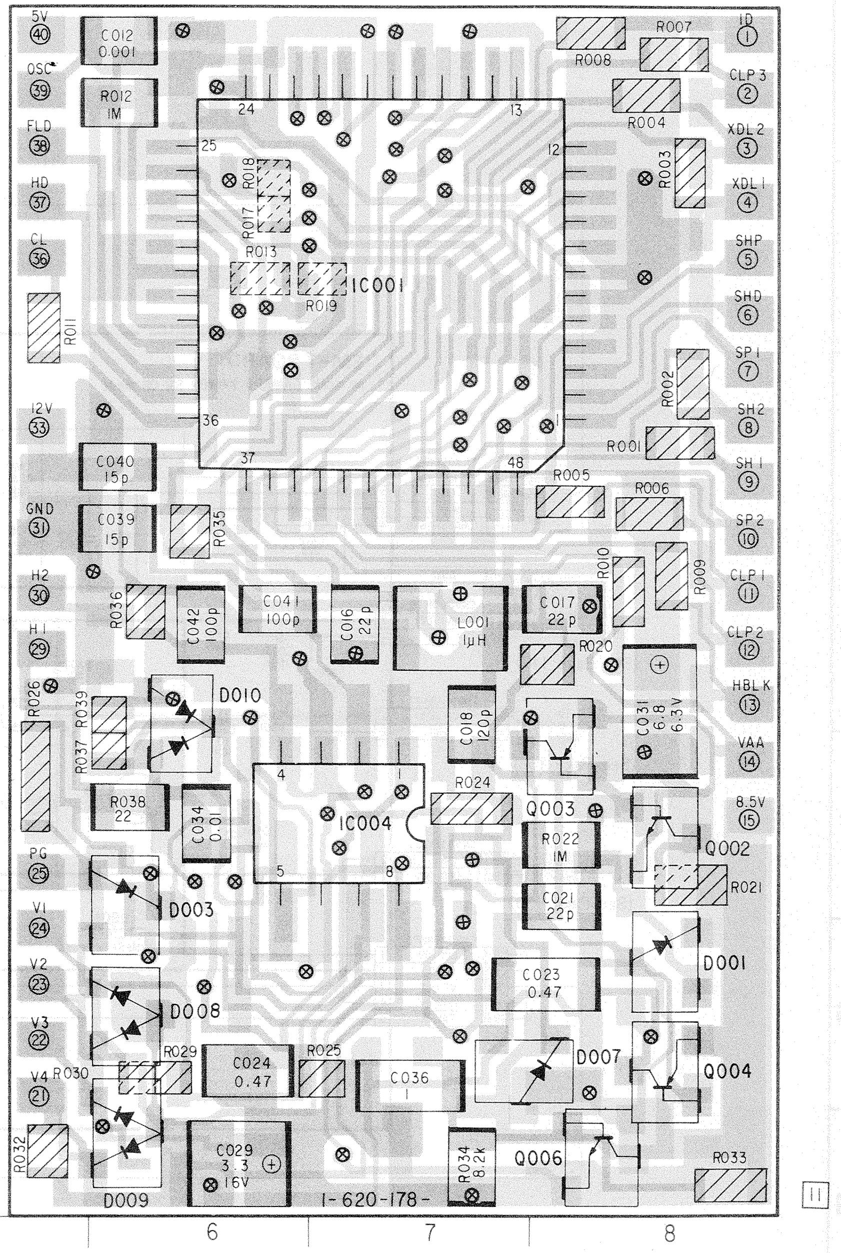


D001	E - 8
D002	E - 1
D003	E - 6
D004	F - 1
D005	E - 2
D006	D - 2
D007	E - 8
D008	E - 6
D009	F - 6
D010	D - 6
Q001	A - 3
Q002	D - 8
Q003	D - 8
Q004	E - 8
Q005	E - 1
Q006	F - 8
IC001	B - 7
IC002	A - 2
IC003	C - 2
IC004	D - 7

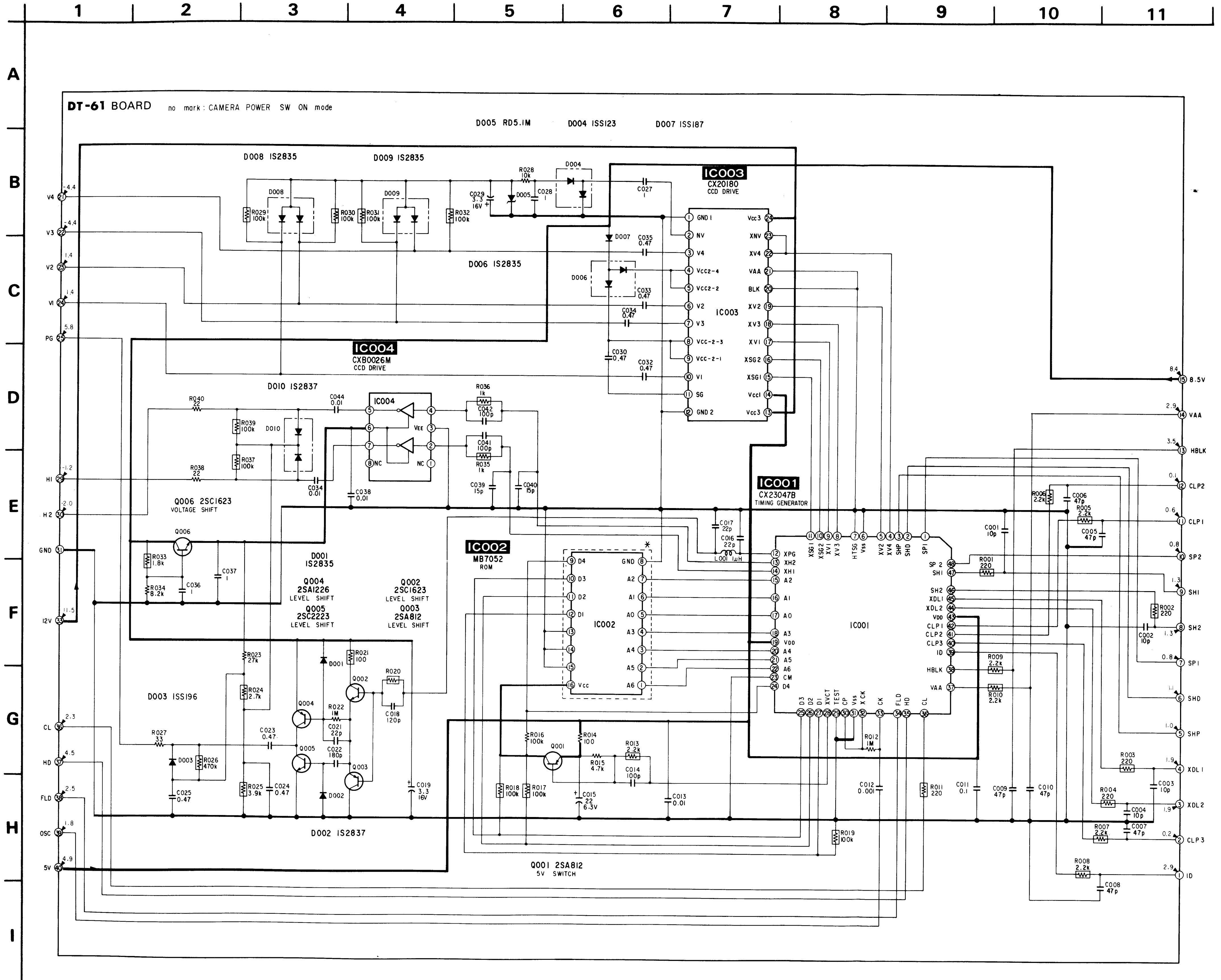
DT-61 BOARD (SIDE B) no mark: CAMERA POWER SW ON mode


A
B
C
D
E
F
1
2
3
4
ID ①
CLP3 ②
XDL2 ③
XDL1 ④
SHP ⑤
SHD ⑥
SP1 ⑦
SH2 ⑧
SH1 ⑨
SP2 ⑩
CLP1 ⑪
CLP2 ⑫
HBLK ⑬
VAA ⑭
8.5V ⑮
5V ㊵
OSC ㊴
FLD ㊳
HD ㊲
CL ㊱
12V ㉝
GND ㉛
H2 ㉚
H1 ㉙
PG ㉕
V1 ㉔
V2 ㉓
V3 ㉒
V4 ㉑
C008 47p
C007 47p
C004 10p
C003 10p
C002 10p
C001 10p
C005 47p
C006 47p
C009 47p
C010 47p
C011 0.1
R014 100
R016 100k
R015 4.7k
Q001
C015 22 6.3V
C014 100p
C013 0.01
IC002
IC003
R040 22
C044 0.01
C022 180p
D006
C030 0.47
C025 0.47
C032 0.47
C027 1
R023 27k
R027 33
C038 0.01
C037 1
D002
Q005
D004
R028 10k
D005
C019 3.3 16V
C028 1
C034 0.47
C033 0.47
C035 0.47
1-620-178-

DT-61 BOARD (SIDE A) no mark; CAMERA POWER SW ON mode


5
6
7
8
5V ㊵
OSC ㊴
FLD ㊳
HD ㊲
CL ㊱
12V ㉝
GND ㉛
H2 ㉚
H1 ㉙
PG ㉕
V1 ㉔
V2 ㉓
V3 ㉒
V4 ㉑
ID ①
CLP3 ②
XDL2 ③
XDL1 ④
SHP ⑤
SHD ⑥
SP1 ⑦
SH2 ⑧
SH1 ⑨
SP2 ⑩
CLP1 ⑪
CLP2 ⑫
HBLK ⑬
VAA ⑭
8.5V ⑮
C012 0.001
R012 1M
R008
R007
R004
R003
IC001
R018
R017
R013
R019
R011
R002
R001
R005
R006
C040 15p
C039 15p
R035
R036
C042 100p
C041 100p
C016 22p
L001 1μH
C017 22p
R010
R009
R020
R026
R039
R037
D010
C018 120p
C031 6.8 6.3V
R038 22
C034 0.01
IC004
R024
Q003
R022 1M
Q002
R021
C021 22p
D003
D008
C023 0.47
D001
R029
R030
C024 0.47
R025
C036 1
D007
Q004
R032
D009
C029 3.3 16V
R034 8.2k
Q006
R033
1-620-178-

DT-61 (TIMING GENERATOR, REGISTER DRIVE) SCHEMATIC DIAGRAM


1 2 3 4 5 6 7 8 9 10 11
A B C D E F G H I J
DT-61 BOARD
no mark : CAMERA POWER SW ON mode
D005 RD5.1M
D004 1SS123
D007 1SS187
D008 1S2835
D009 1S2835
D006 1S2835
D010 1S2837
IC003 CX20180 CCD DRIVE
IC004 CXB0026M CCD DRIVE
IC001 CX23047B TIMING GENERATOR
IC002 MB7052 ROM
Q006 2SC1623 VOLTAGE SHIFT
D001 1S2835
Q004 2SA1226 LEVEL SHIFT
Q005 2SC2223 LEVEL SHIFT
Q002 2SC1623 LEVEL SHIFT
Q003 2SA812 LEVEL SHIFT
D003 1SS196
D002 1S2837
Q001 2SA812 5V SWITCH
V4 V3 V2 V1 PG H1 H2 GND 12V CL HD FLD OSC 5V
8.5V VAA HBLK CLP2 CLP1 SP2 SHI SH2 SP1 SHD SHP XDL1 XDL2 CLP3 ID

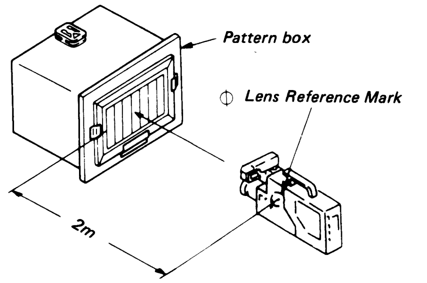
*

* Depending upon the sets, there are ones in which IC002 are not mounted.

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance; 1/32W in printing resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ▭ : printing resistor.
- ▭ : panel designation.
- ▭ : adjustment designation.
- ━ : B+ line.
- Measuring conditions of voltage value and waveform
  (1) The subject is color bar of pattern box.
  (2) The voltage value is a reference value between the grounding.
  (The tester used is the digital multimeter DC10MΩ)

1. **Connection**


Pattern box
Lens Reference Mark
2m

2. **Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.**

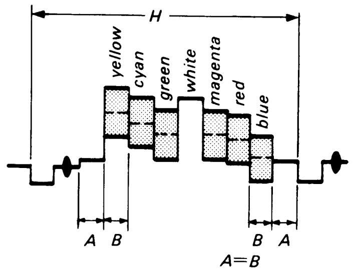


Fig. a Camera output waveform of TP202 (Pin 3 of CN201) on VI-21 board

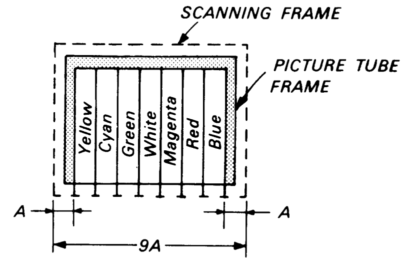

SCANNING FRAME
PICTURE TUBE FRAME
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
A
9A

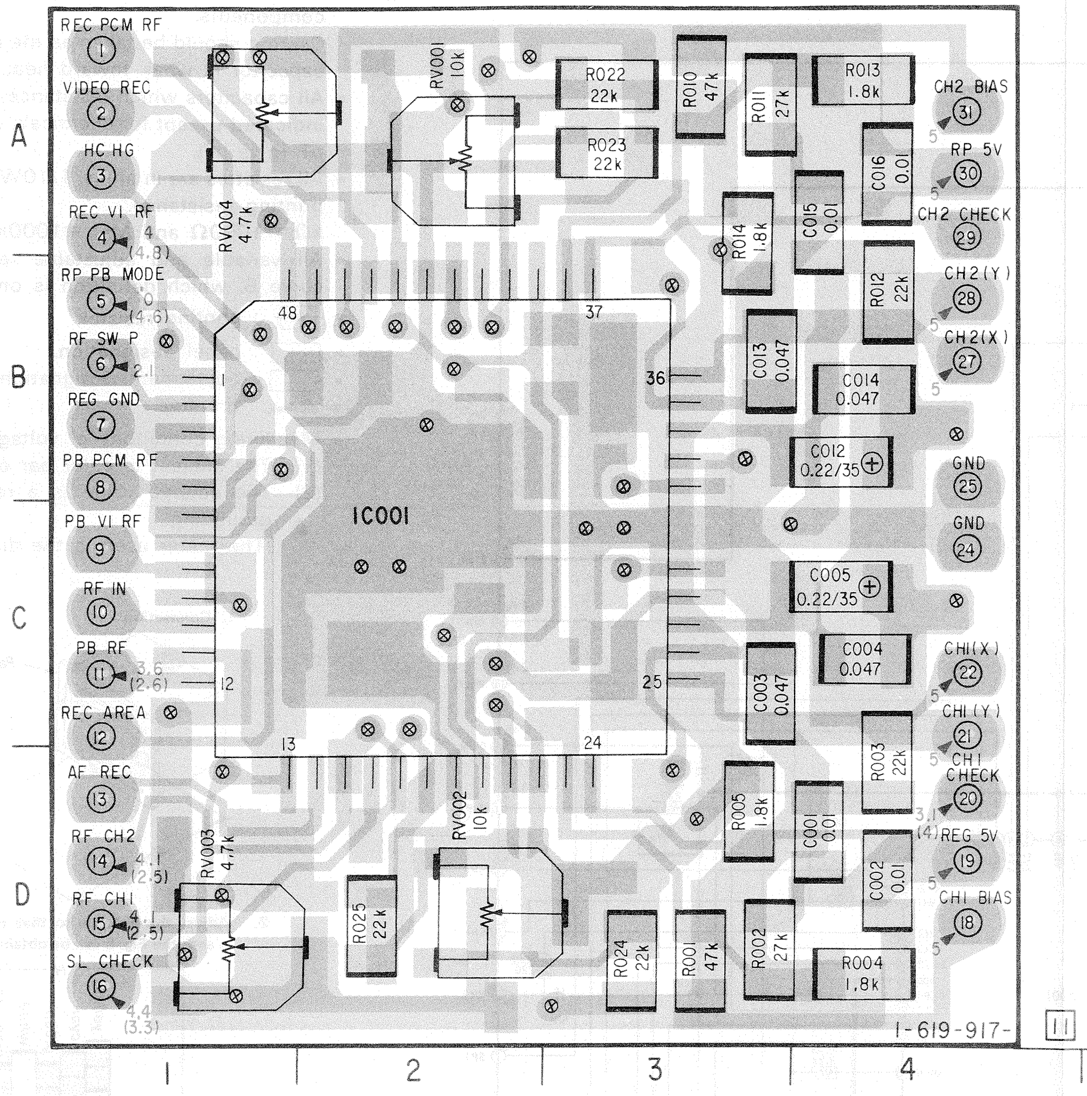
Fig. b Picture of TV monitor screen

RP-34 BOARD (REC/PB HEAD AMP) PRINTED WIRING BOARD

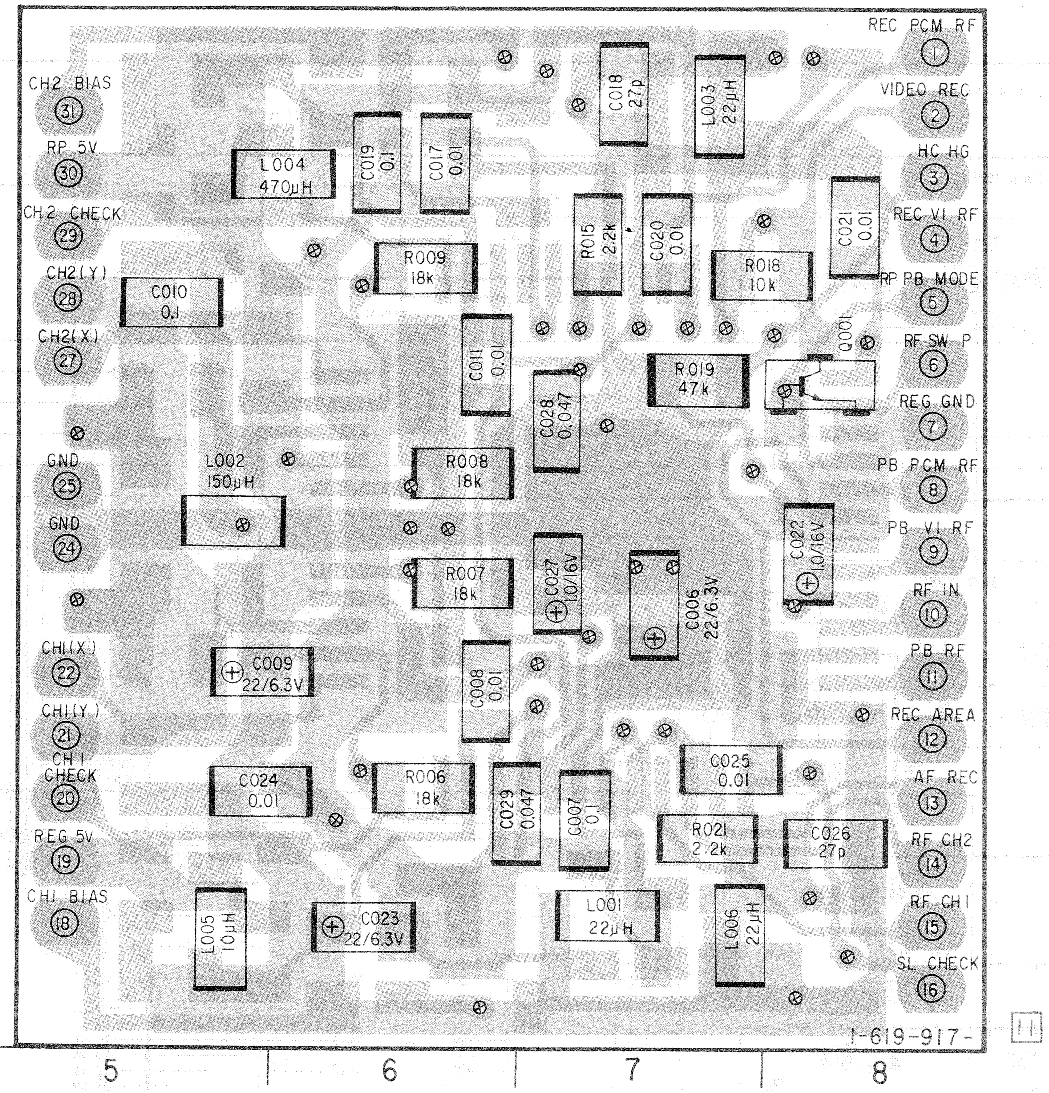
RP-34 BOARD	
IC001	C-2
Q001	B-8
RV001	A-2
RV002	D-2
RV003	D-1
RV004	A-1

RP-34 BOARD (SIDE B)

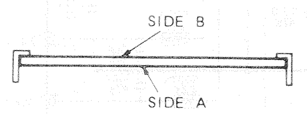
no mark : REC mode
( ) : PB mode


REC PCM RF ①
VIDEO REC ②
HC HG ③
REC VI RF ④
RP PB MODE ⑤
RF SW P ⑥
REG GND ⑦
PB PCM RF ⑧
PB VI RF ⑨
RF IN ⑩
PB RF ⑪
REC AREA ⑫
AF REC ⑬
RF CH2 ⑭
RF CH1 ⑮
SL CHECK ⑯
CH1 BIAS ⑱
REG 5V ⑲
CH1 CHECK ⑳
CH1(Y) ㉑
CH1(X) ㉒
GND ㉔
GND ㉕
CH2(X) ㉗
CH2(Y) ㉘
CH2 CHECK ㉙
RP 5V ㉚
CH2 BIAS ㉛
4 (4.8)
0 (4.6)
2.1
3.6 (2.6)
4.1 (2.5)
4.1 (2.5)
4.4 (3.3)
3.1 (4)
5
IC001
48
37
36
1
12
13
24
25
RV001 10k
RV002 10k
RV003 4.7k
RV004 4.7k
R022 22k
R023 22k
R010 47k
R011 27k
R013 1.8k
R014 1.8k
R012 22k
R003 22k
R005 1.8k
R004 1.8k
R002 27k
R001 47k
R024 22k
R025 22k
C016 0.01
C015 0.01
C013 0.047
C014 0.047
C012 0.22/35
C005 0.22/35
C004 0.047
C003 0.047
C001 0.01
C002 0.01
1-619-917-11
A
B
C
D
1
2
3
4

RP-34 BOARD (SIDE A)


CH2 BIAS ㉛
RP 5V ㉚
CH2 CHECK ㉙
CH2(Y) ㉘
CH2(X) ㉗
GND ㉕
GND ㉔
CH1(X) ㉒
CH1(Y) ㉑
CH1 CHECK ⑳
REG 5V ⑲
CH1 BIAS ⑱
REC PCM RF ①
VIDEO REC ②
HC HG ③
REC VI RF ④
RP PB MODE ⑤
RF SW P ⑥
REG GND ⑦
PB PCM RF ⑧
PB VI RF ⑨
RF IN ⑩
PB RF ⑪
REC AREA ⑫
AF REC ⑬
RF CH2 ⑭
RF CH1 ⑮
SL CHECK ⑯
L004 470μH
C019 0.1
C017 0.01
C018 27p
L003 22μH
C010 0.1
R009 18k
C011 0.01
R015 2.2k
C020 0.01
R018 10k
C021 0.01
Q001
R019 47k
C028 0.047
L002 150μH
R008 18k
R007 18k
C027 1.0/16V
C006 22/6.3V
C022 1.0/16V
C009 22/6.3V
C008 0.01
C024 0.01
R006 18k
C029 0.047
C007 0.1
C025 0.01
R021 2.2k
C026 27p
L001 22μH
L006 22μH
L005 10μH
C023 22/6.3V
1-619-917-11
5
6
7
8

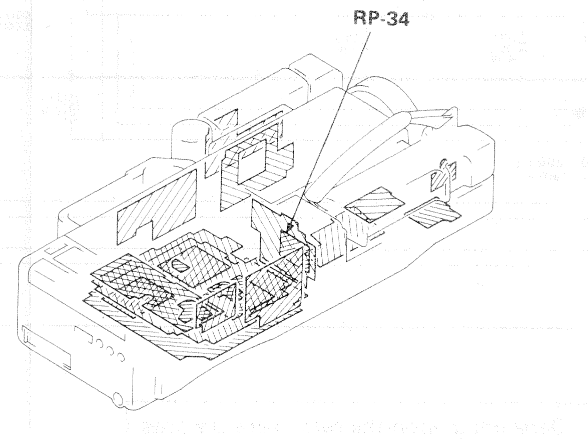
Note (Printed Wiring Board):
- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transisotr (RP-34: Q001) transistor with resistors. Refer to the RP-34 board schematic diagram for digital transistor.


SIDE B
SIDE A

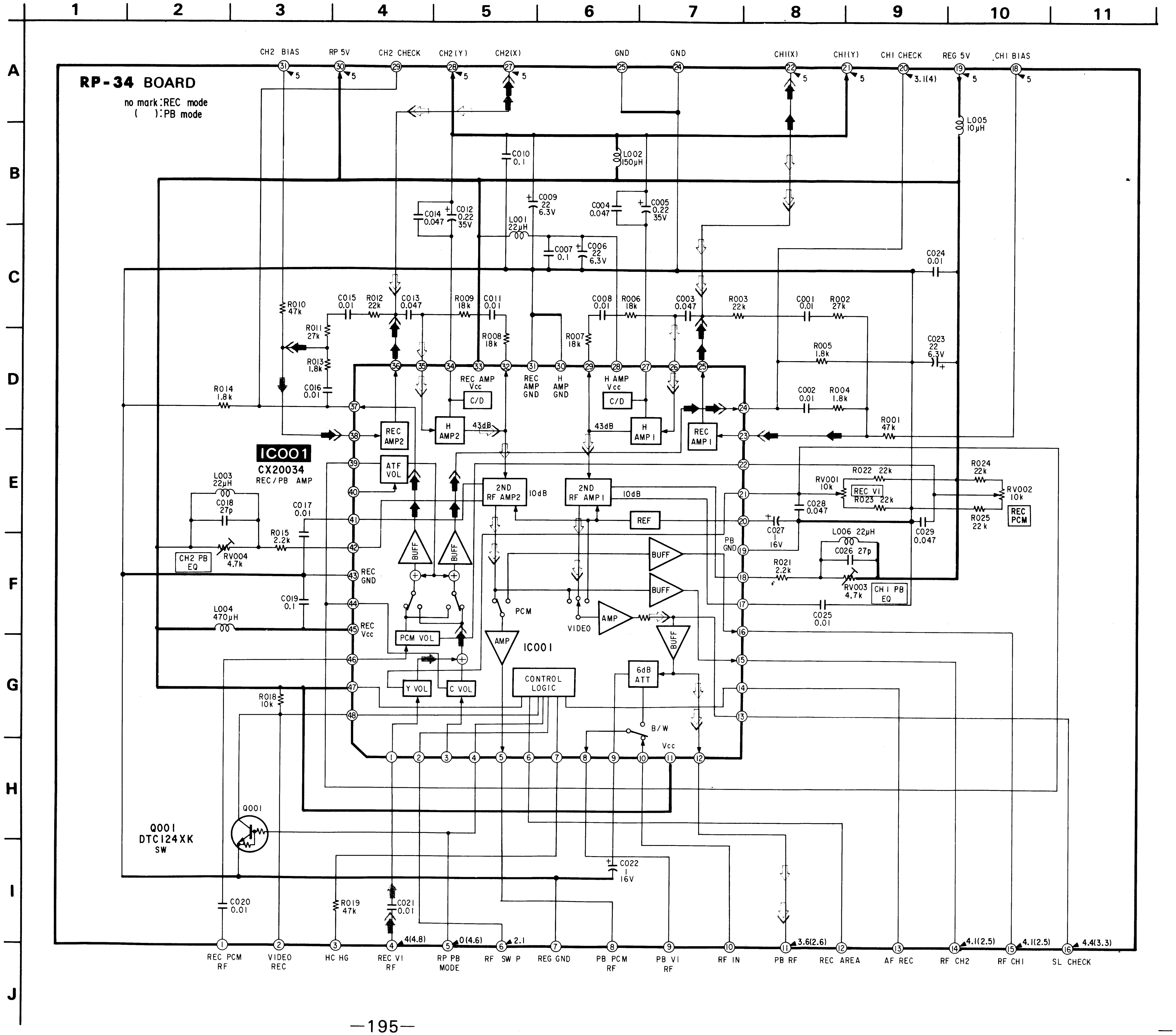
Note

Soldering side: (SIDE A)	**Parts on the soldering side being seen from the soldering are stated.**
Component side: (SIDE B)	**Parts on the component side being seen from the component are stated.**

Regarding color indication of patterns
- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.



RP-34 BOARD (REC/PB HEAD AMP) SCHEMATIC DIAGRAM


RP-34 BOARD
no mark:REC mode
( ):PB mode
IC001
CX20034
REC/PB AMP
Q001
DTC124XK
SW
CH2 BIAS
RP 5V
CH2 CHECK
CH2(Y)
CH2(X)
GND
GND
CH1(X)
CH1(Y)
CH1 CHECK
REG 5V
CH1 BIAS
REC AMP2
ATF VOL
H AMP2
2ND RF AMP2
2ND RF AMP1
H AMP1
REC AMP1
REF
BUFF
AMP
PCM VOL
Y VOL
C VOL
CONTROL LOGIC
6dB ATT
B/W
CH2 PB EQ
CH1 PB EQ
REC V1
REC PCM
REC PCM RF
VIDEO REC
HC HG
REC V1 RF
RP PB MODE
RF SW P
REG GND
PB PCM RF
PB V1 RF
RF IN
PB RF
REC AREA
AF REC
RF CH2
RF CH1
SL CHECK
1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat. .
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance. kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)

- **Signal path**

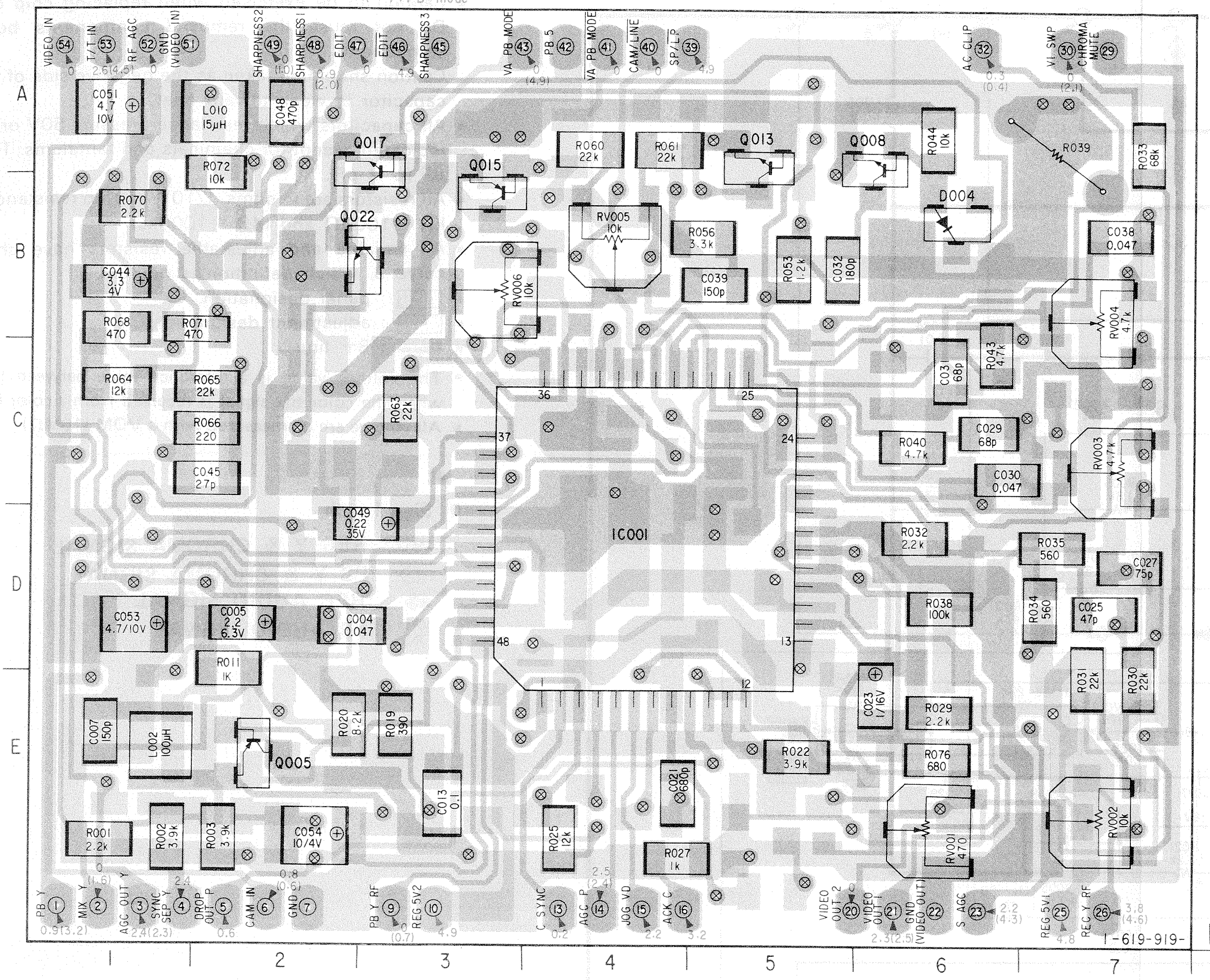
➡ :REC Y & CHROMA SIGNAL
⇨ :PB Y & CHROMA SIGNAL
➡ :REC AUDIO SIGNAL
⇨ :PB AUDIO SIGNAL

VY-8 (Y SIGNAL PROCESS) PRINTED WIRING BOARD

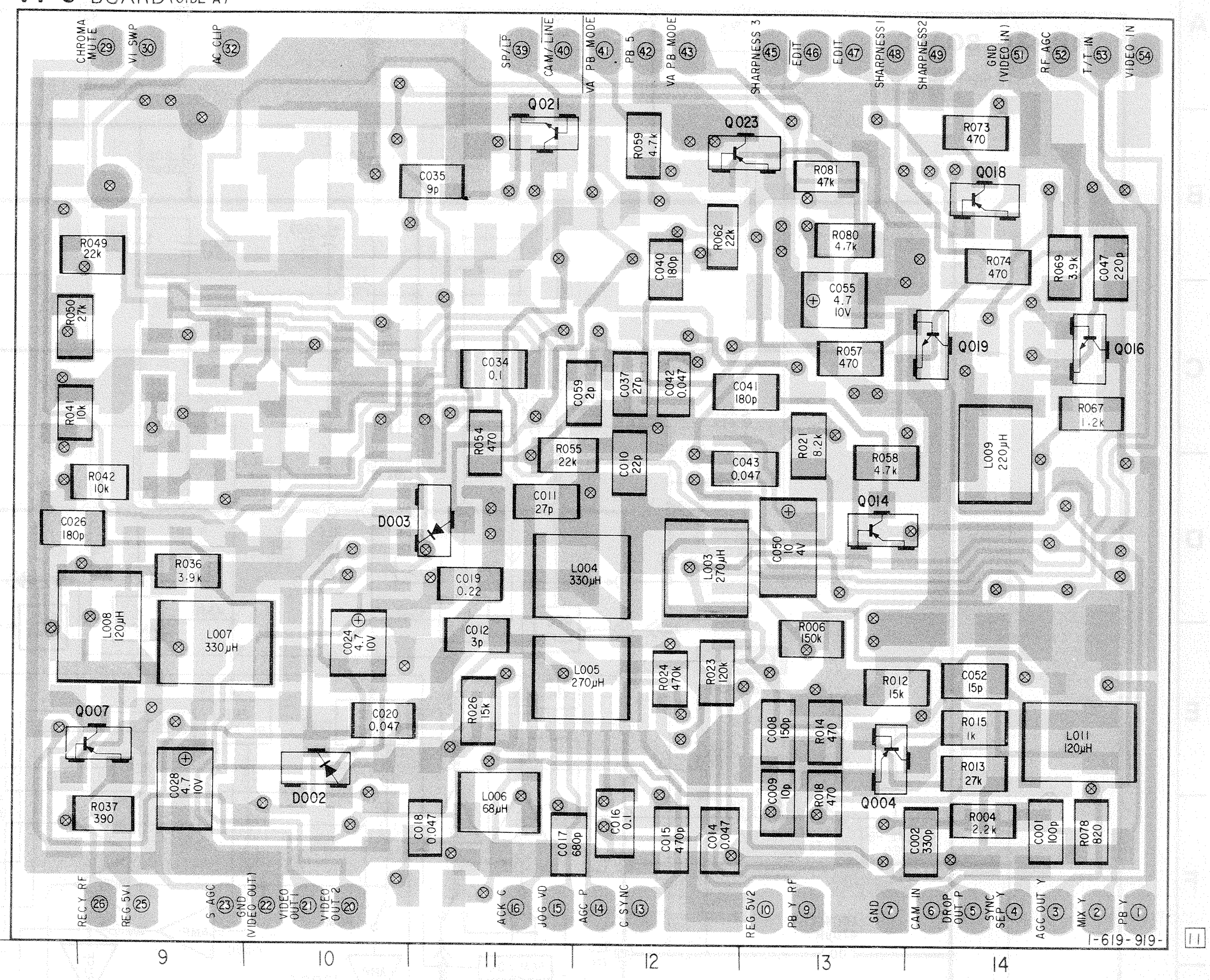
D002	E-10
D003	D-11
D004	B-6
IC001	D-4
Q004	E-13
Q005	E-2
Q007	E-9
Q008	A-6
Q013	A-15
Q014	D-13
Q015	B-3
Q016	B-14
Q017	A-3
Q018	B-14
Q019	B-14
Q021	A-11
Q022	B-2
Q023	A-13
RV001	E-6
RV002	E-7
RV003	C-7
RV004	B-7
RV005	B-4
RV006	B-3

VY-8 BOARD (SIDE B)

no mark: REC mode
( ): PB mode

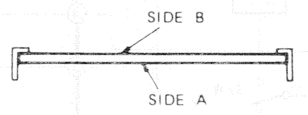

A
B
C
D
E
1
2
3
4
5
6
7
IC001
Q005
Q008
Q013
Q015
Q017
Q022
D004
RV001
RV002
RV003
RV004
RV005
RV006
VIDEO IN
T/T IN
RF AGC
GND (VIDEO IN)
SHARPNESS2
SHARPNESS1
EDIT
SHARPNESS3
VA PB MODE
PB 5
CAM/LINE
SP/LP
AC CLIP
VL SWP
CHROMA MUTE
PB Y
MIX Y
AGC OUT Y
SYNC SEP
DROP OUT P
CAM IN
GND
PB Y RF
REG 5V2
C SYNC
AGC P
JOG VD
ACK C
VIDEO OUT 2
VIDEO OUT 1
GND (VIDEO OUT)
S AGC
REG 5V1
REC Y RF
1-619-919-

VY-8 BOARD (SIDE A)


8
9
10
11
12
13
14
Q004
Q007
Q014
Q016
Q018
Q019
Q021
Q023
D002
D003
L003
L004
L005
L006
L007
L008
L009
L011
CHROMA MUTE
VL SWP
AC CLIP
SP/LP
CAM/LINE
VA PB MODE
PB 5
SHARPNESS 3
EDIT
SHARPNESS1
SHARPNESS2
GND (VIDEO IN)
RF AGC
T/T IN
VIDEO IN
REC Y RF
REG 5V1
S AGC
GND (VIDEO OUT)
VIDEO OUT 1
VIDEO OUT 2
ACK C
JOG VD
AGC P
C SYNC
REG 5V2
PB Y RF
GND
CAM IN
DROP OUT P
SYNC SEP
AGC OUT Y
MIX Y
PB Y
1-619-919-

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the **component side.**
- ●— : lead wire attached to the **soldering side.**
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (VY-8: Q008, 013, 021) transistor with resistors.
  Refer to the VY-8 board schematic diagram for digital transistor.


SIDE B
SIDE A

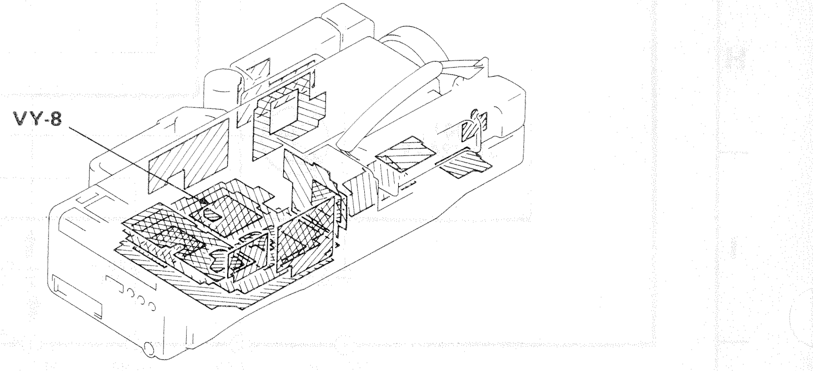
Note

Soldering side: (SIDE A)	Parts on the soldering side being seen from the soldering are stated.
Component side: (SIDE B)	Parts on the component side being seen from the component are stated.

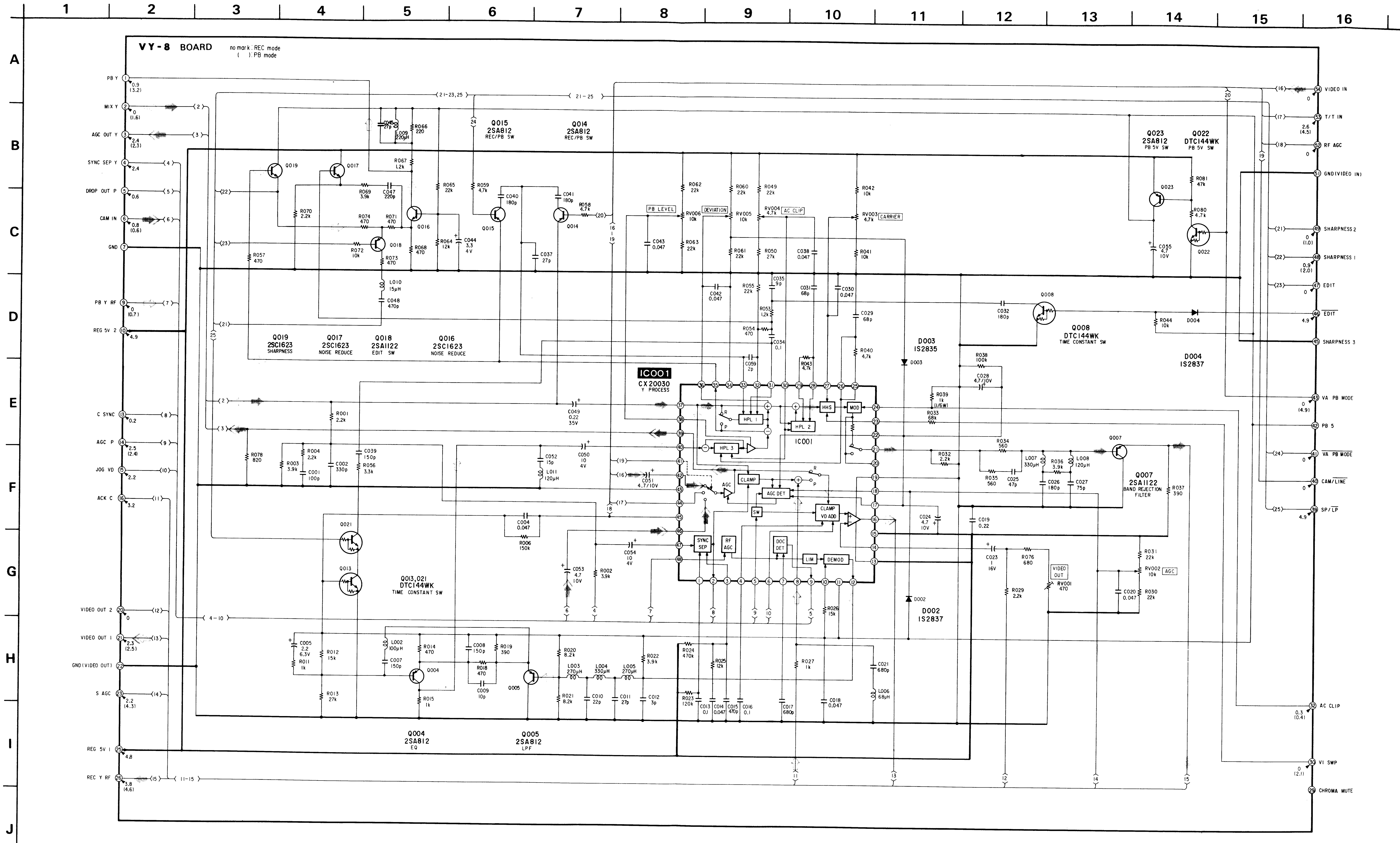
Regarding color indication of patterns

* Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).

* Pattern being seen in the state of the rear surface side is indicated in green pattern.



VY-8 BOARD (Y SIGNAL PROCESSING) SCHEMATIC DIAGRAM


1
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5
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7
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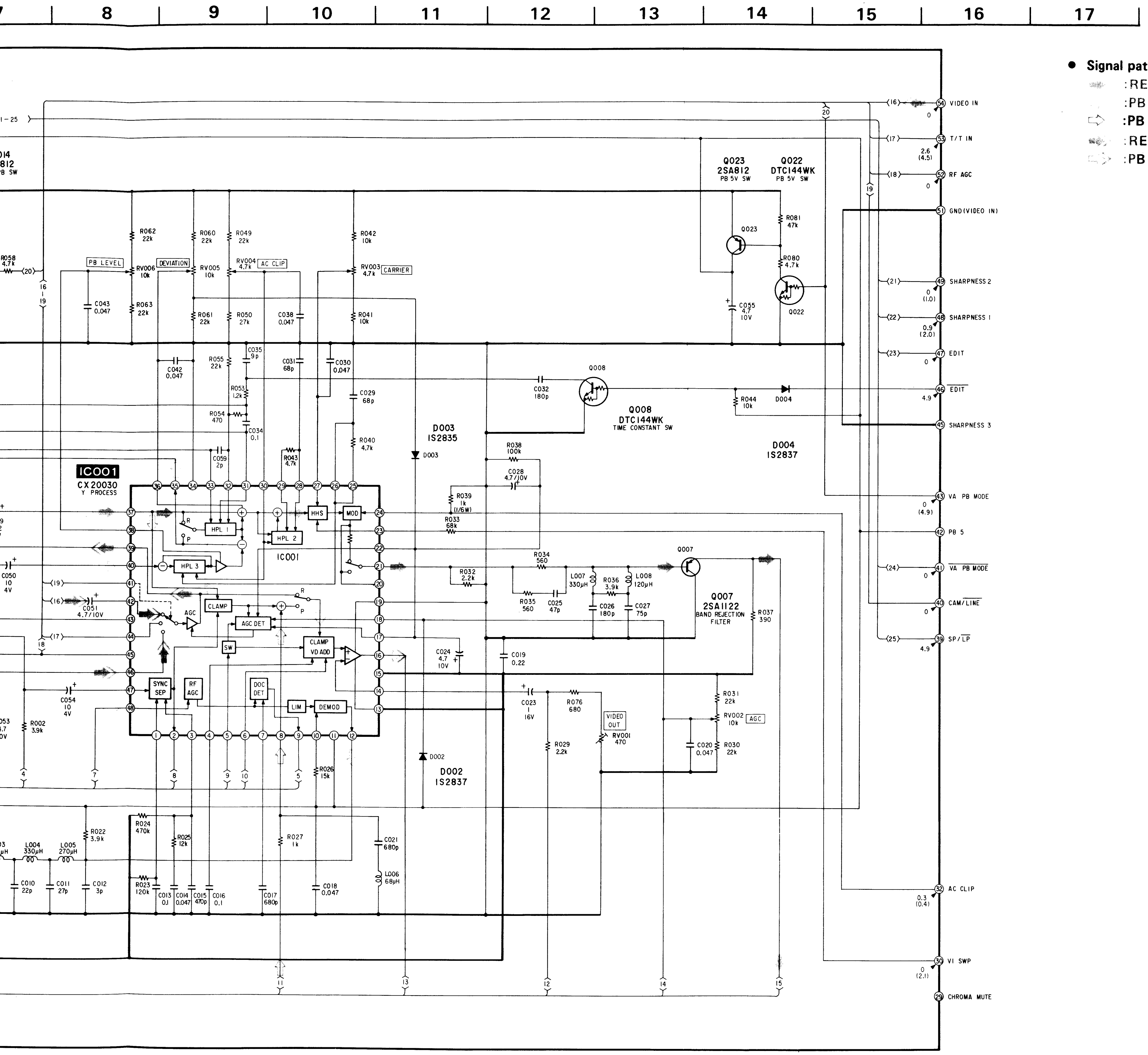
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
VY-8 BOARD
no mark : REC mode
( ) : PB mode
PB Y ① 0.9 (3.2)
MIX Y ② 0 (1.6)
AGC OUT Y ③ 2.4 (2.3)
SYNC SEP Y ④ 2.4
DROP OUT P ⑤ 0.6
CAM IN ⑥ 0.8 (0.6)
GND ⑦
PB Y RF ⑨ 0 (0.7)
REG 5V 2 ⑩ 4.9
C SYNC ⑬ 0.2
AGC P ⑭ 2.5 (2.4)
JOG VD ⑮ 2.2
ACK C ⑯ 3.2
VIDEO OUT 2 ⑳ 0
VIDEO OUT 1 ㉑ 2.3 (2.5)
GND (VIDEO OUT) ㉒
S AGC ㉓ 2.2 (4.3)
REG 5V 1 ㉕ 4.8
REC Y RF ㉖ 3.8 (4.6)
VIDEO IN (54) 0
T/T IN (53) 2.6 (4.5)
RF AGC (52) 0
GND (VIDEO IN) (51)
SHARPNESS 2 ㊾ 0 (1.0)
SHARPNESS 1 ㊽ 0.9 (2.0)
EDIT ㊼ 0
EDIT ㊻ 4.9
SHARPNESS 3 ㊺
VA PB MODE ㊸ 0 (4.9)
PB 5 ㊷
VA PB MODE ㊶ 0
CAM/LINE ㊵ 0
SP/LP ㊴ 4.9
AC CLIP ㉜ 0.3 (0.4)
VI SWP ㉚ 0 (2.1)
CHROMA MUTE ㉙
21-23, 25
21-25
4-10
11-15
Q015 2SA812 REC/PB SW
Q014 2SA812 REC/PB SW
Q023 2SA812 PB 5V SW
Q022 DTC144WK PB 5V SW
Q019 2SC1623 SHARPNESS
Q017 2SC1623 NOISE REDUCE
Q018 2SA1122 EDIT SW
Q016 2SC1623 NOISE REDUCE
Q008 DTC144WK TIME CONSTANT SW
D003 1S2835
D004 1S2837
D002 1S2837
Q007 2SA1122 BAND REJECTION FILTER
Q013,021 DTC144WK TIME CONSTANT SW
Q004 2SA812 EQ
Q005 2SA812 LPF
IC001 CX20030 Y PROCESS
IC001
PB LEVEL
DEVIATION
AC CLIP
CARRIER
VIDEO OUT
AGC
RV006 10k
RV005 10k
RV004 4.7k
RV003 4.7k
RV002 10k
RV001 470
HPL 1
HPL 2
HPL 3
HHS
MOD
CLAMP
AGC DET
SW
CLAMP VD ADD
SYNC SEP
RF AGC
DOC DET
LIM
DEMOD
C045 27p
L009 220μH
R066 220
R067 1.2k
R069 3.9k
C047 220p
R065 22k
R059 4.7k
C040 180p
C041 180p
R058 4.7k
R070 2.2k
R074 470
R071 470
R072 10k
R073 470
R068 470
R064 12k
C044 3.3 4V
C037 27p
R057 470
L010 15μH
C048 470p
R062 22k
R060 22k
R049 22k
R042 10k
C043 0.047
R063 22k
R061 22k
R050 27k
C038 0.047
R041 10k
C042 0.047
R055 22k
C035 9p
C031 68p
C030 0.047
C029 68p
R053 1.2k
R054 470
C034 0.1
C059 2p
R043 4.7k
R040 4.7k
R081 47k
R080 4.7k
C055 4.7 10V
C032 180p
R044 10k
R038 100k
C028 4.7/10V
R039 1k (1/6W)
R033 68k
R034 560
R032 2.2k
L007 330μH
R036 3.9k
L008 120μH
R035 560
C025 47p
C026 180p
C027 75p
R037 390
C024 4.7 10V
C019 0.22
C023 1 16V
R076 680
R031 22k
R029 2.2k
C020 0.047
R030 22k
C049 0.22 35V
R001 2.2k
R078 820
R003 3.9k
R004 2.2k
C001 100p
C002 330p
C039 150p
R056 3.3k
C052 15p
L011 120μH
C050 10 4V
C051 4.7/10V
C004 0.047
R006 150k
C053 4.7 10V
R002 3.9k
C054 10 4V
R026 15k
C005 2.2 6.3V
R011 1k
R012 15k
R013 27k
L002 100μH
C007 150p
R014 470
R015 1k
C008 150p
R019 390
R018 470
C009 10p
R020 8.2k
R021 8.2k
L003 270μH
L004 330μH
L005 270μH
C010 22p
C011 27p
C012 3p
R022 3.9k
R024 470k
R023 120k
R025 12k
C013 0.1
C014 0.047
C015 470p
C016 0.1
C017 680p
R027 1k
C018 0.047
C021 680p
L006 68μH


8
9
10
11
12
13
14
15
16
17
IC001
CX20030
Y PROCESS
HPL 1
HPL 2
HPL 3
HHS
MOD
CLAMP
AGC
AGC DET
SW
CLAMP
VD ADD
SYNC SEP
RF AGC
DOC DET
LIM
DEMOD
PB LEVEL
DEVIATION
AC CLIP
CARRIER
VIDEO OUT
AGC
Q023
2SA812
PB 5V SW
Q022
DTC144WK
PB 5V SW
Q008
DTC144WK
TIME CONSTANT SW
D003
1S2835
D004
1S2837
D002
1S2837
Q007
2SA1122
BAND REJECTION FILTER
VIDEO IN
T/T IN
RF AGC
GND(VIDEO IN)
SHARPNESS 2
SHARPNESS 1
EDIT
EDIT
SHARPNESS 3
VA PB MODE
PB 5
VA PB MODE
CAM/LINE
SP/LP
AC CLIP
V1 SWP
CHROMA MUTE

- **Signal path**

  ➡ :REC Y SIGNAL

  :PB Y SIGNAL

  ⇨ :PB CHROMA SIGNAL

  ➡ :REC Y & CHROMA SIGNAL

  ⇨ :PB Y & CHROMA SIGNAL

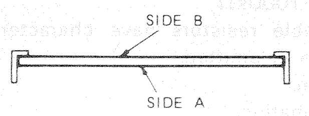
Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat. .
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)

VC-10 BOARD (CHROMA SIGNAL PROCESSING) PRINTED WIRING BOARD

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (VC-10: Q001) transistor with resistors. Refer to the VC-10 board schematic diagram for digital transistor.

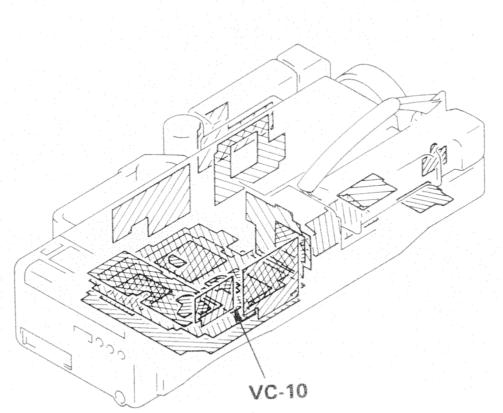

SIDE B
SIDE A

Note

Soldering side: (SIDE A)	Parts on the soldering side being seen from the soldering are stated.
Component side: (SIDE B)	Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.

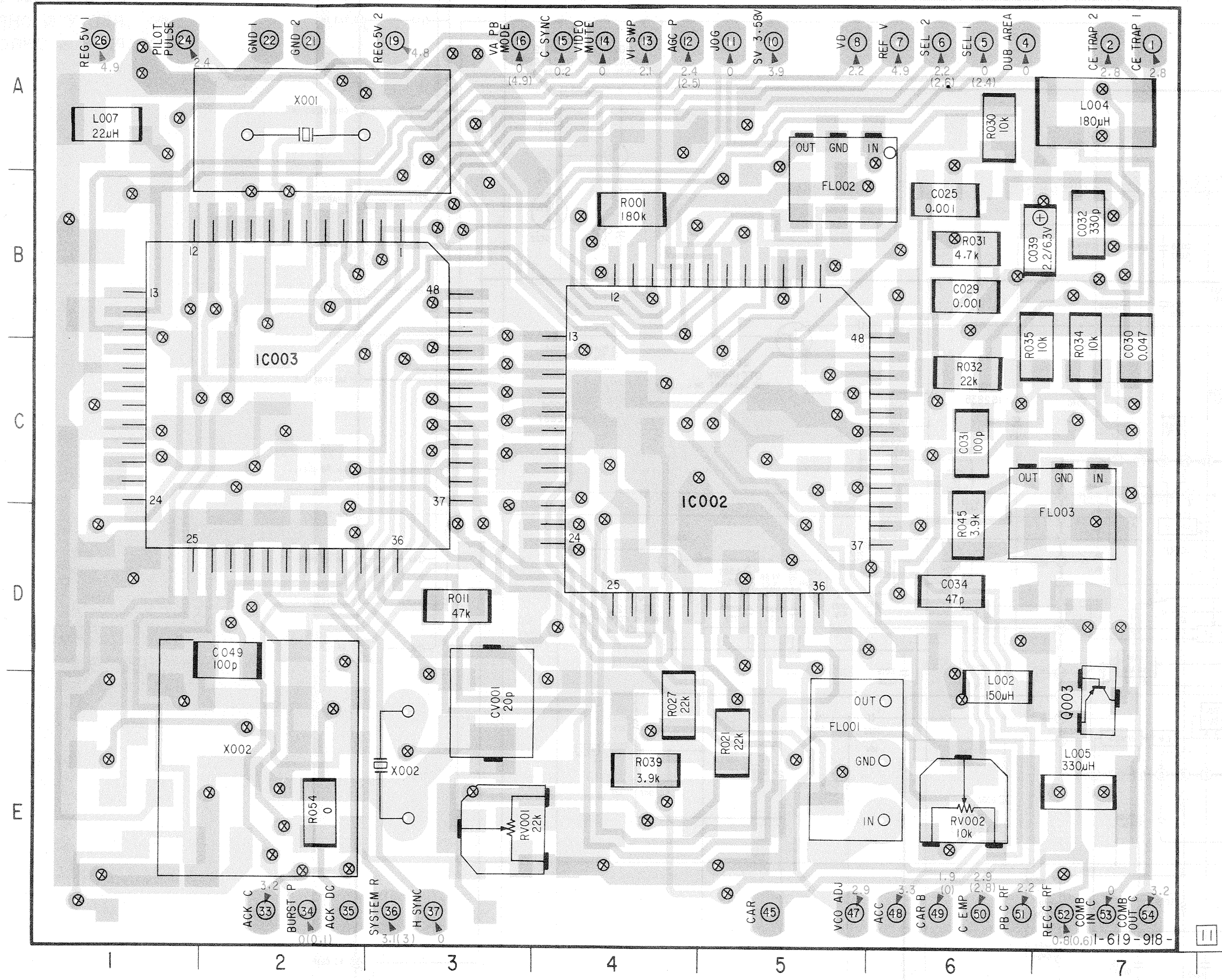


VC-10 BOARD

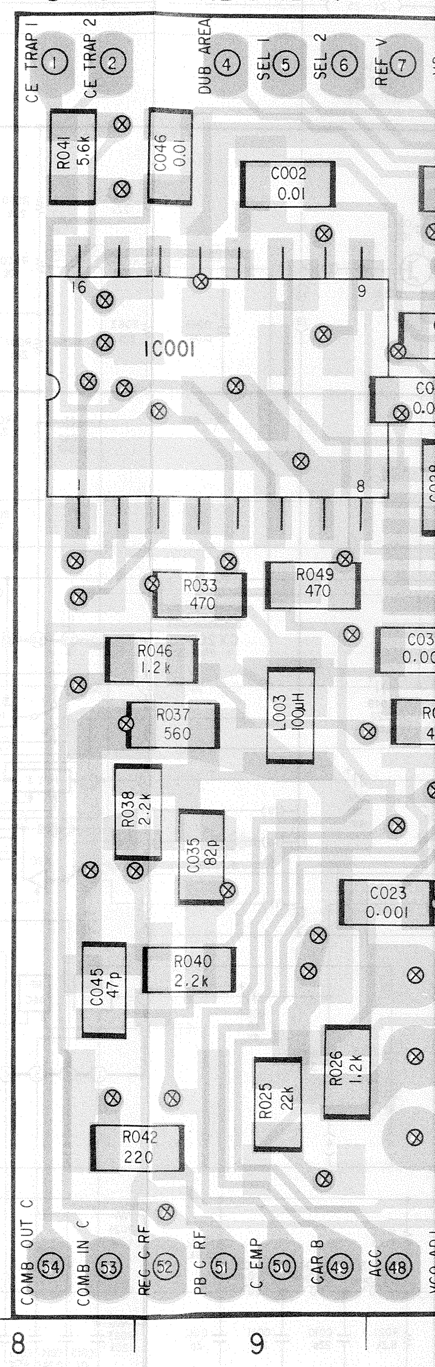
IC001	B-9
IC002	C-5
IC003	C-2
Q001	E-14
Q002	D-12
Q003	E-7
RV001	E-3
RV002	E-6
CV001	E-3
D001	E-14

VC-10 BOARD (SIDE B)

no mark : REC mode
( ) : PB mode


A
B
C
D
E
1
2
3
4
5
6
7
REG 5V 1 (26) 4.9
PILOT PULSE (24) 2.4
GND 1 (22)
GND 2 (21)
REG 5V 2 (19) 4.8
VA PB MODE (16) 0 (4.9)
C SYNC (15) 0.2
VIDEO MUTE (14) 0
VI SWP (13) 2.1
AGC P (12) 2.4 (2.5)
JOG (11) 0
SV 3.58M (10) 3.9
VD (8) 2.2
REF V (7) 4.9
SEL 2 (6) 2.2 (2.6)
SEL 1 (5) 0 (2.4)
DUB AREA (4) 0
CE TRAP 2 (2) 2.8
CE TRAP 1 (1) 2.8
L007 22μH
X001
IC003
IC002
R001 180k
FL002
OUT GND IN
C025 0.001
R030 10k
L004 180μH
R031 4.7k
C039 2.2/6.3V
C032 330p
C029 0.001
R035 10k
R034 10k
C030 0.047
R032 22k
C031 100p
FL003
R045 3.9k
C034 47p
R011 47k
C049 100p
X002
CV001 20p
R027 22k
R021 22k
R039 3.9k
RV001 22k
R054 0
FL001
OUT
GND
IN
L002 150μH
Q003
L005 330μH
RV002 10k
ACK C (33) 3.2
BURST P (34) 0 (0.1)
ACK DC (35)
SYSTEM R (36) 3.1 (3)
H SYNC (37) 0
CAR (45)
VCO ADJ (47) 2.9
ACC (48) 3.3
CAR B (49) 1.9 (0)
C EMP (50) 2.9 (2.8)
PB C RF (51) 2.2
REC C RF (52) 0.8 (0.6)
COMB IN C (53) 0
COMB OUT C (54) 3.2
1-619-918-
11

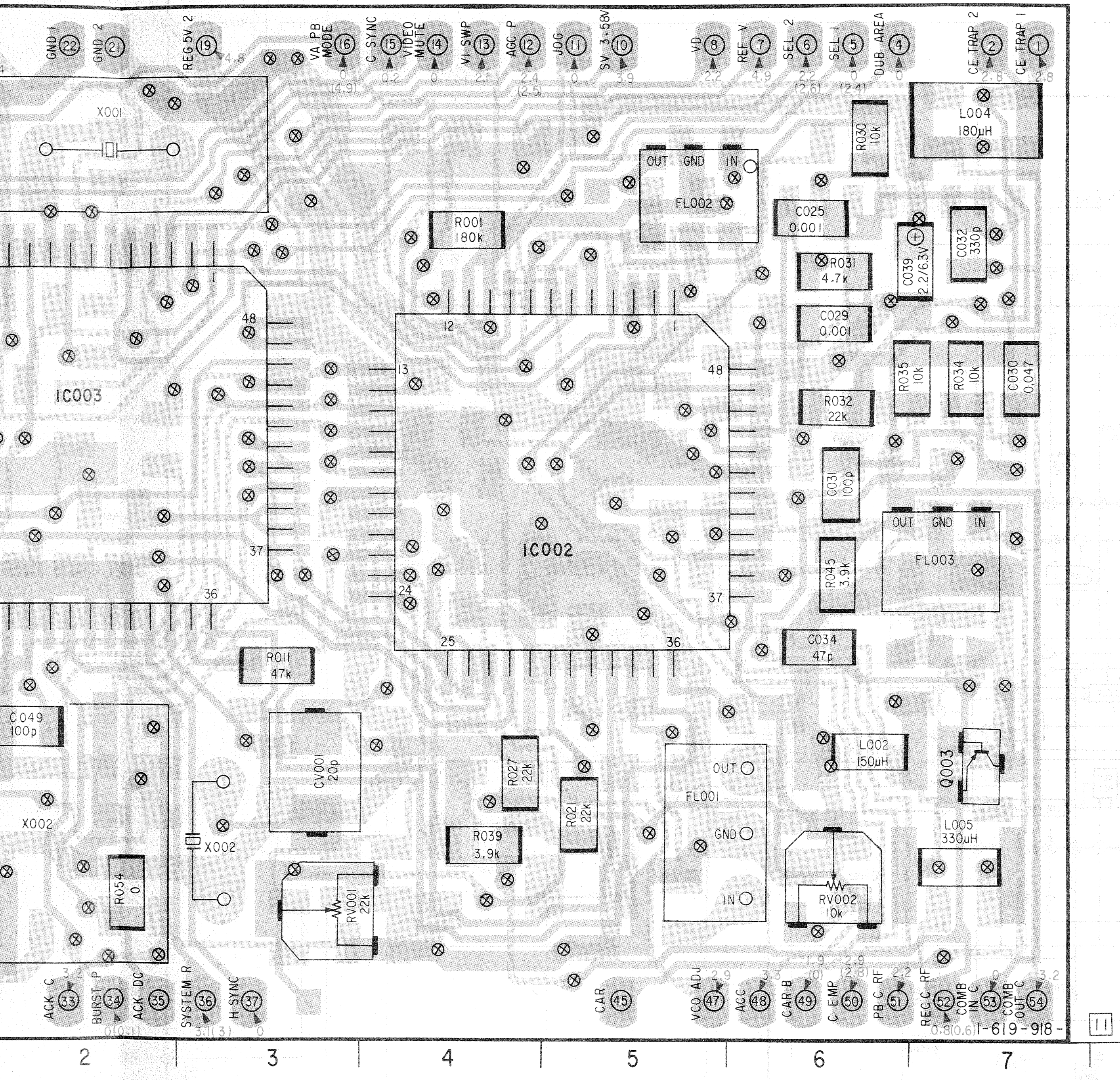
VC-10 BOARD (SIDE A)


8
9
CE TRAP 1 (1)
CE TRAP 2 (2)
DUB AREA (4)
SEL 1 (5)
SEL 2 (6)
REF V (7)
R041 5.6k
C046 0.01
C002 0.01
IC001
16
9
1
8
R033 470
R049 470
R046 1.2k
R037 560
L003 100μH
R038 2.2k
C035 82p
C023 0.001
C045 47p
R040 2.2k
R025 22k
R026 1.2k
R042 220
COMB OUT C (54)
COMB IN C (53)
REC C RF (52)
PB C RF (51)
C EMP (50)
CAR B (49)
ACC (48)

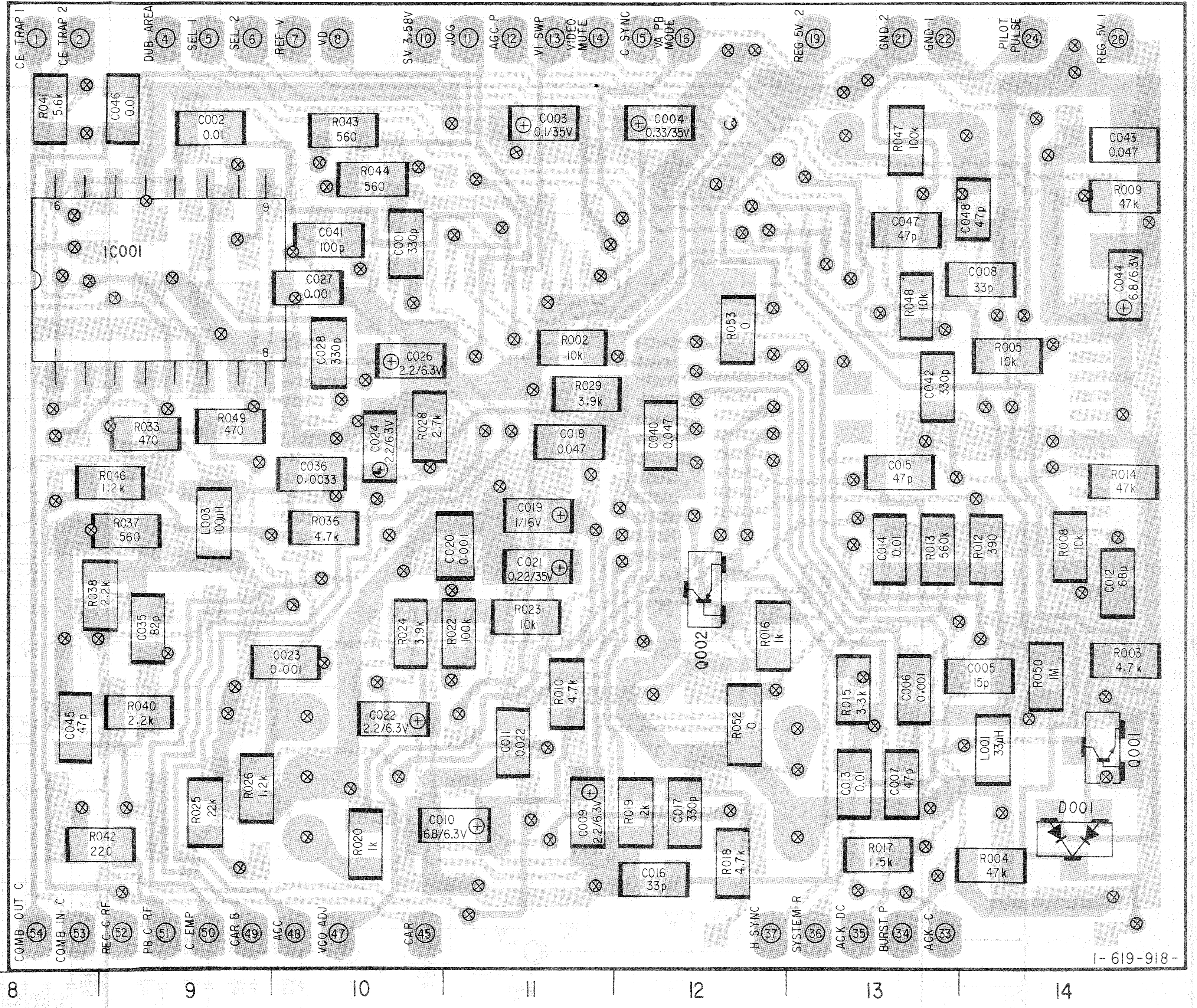
SSING) PRINTED WIRING BOARD

SIDE B)

no mark : REC mode
( ) : PB mode


GND 1 (22)
GND 2 (21)
REG 5V 2 (19)
4.8
VA PB MODE (16)
0 (4.9)
C SYNC (15)
0.2
VIDEO MUTE (14)
0
VI SWP (13)
2.1
AGC P (12)
2.4 (2.5)
JOG (11)
0
SV 3.58V (10)
3.9
VD (8)
2.2
REF V (7)
4.9
SEL 2 (6)
2.2 (2.6)
SEL 1 (5)
0 (2.4)
DUB AREA (4)
0
CE TRAP 2 (2)
2.8
CE TRAP 1 (1)
2.8
X001
IC003
IC002
R001 180k
FL002
OUT GND IN
C025 0.001
R031 4.7k
C039 2.2/6.3V
C032 330p
R030 10k
L004 180µH
C029 0.001
R032 22k
R035 10k
R034 10k
C030 0.047
C031 100p
FL003
R045 3.9k
C034 47p
R011 47k
C049 100p
X002
CV001 20p
RV001 22k
R054 0
R027 22k
R021 22k
R039 3.9k
FL001
OUT
GND
IN
L002 150µH
Q003
L005 330µH
RV002 10k
48
37
36
12
1
13
24
25
ACK C (33)
3.2
BURST P (34)
0 (0.1)
ACK DC (35)
SYSTEM R (36)
3.1 (3)
H SYNC (37)
0
CAR (45)
VCO ADJ (47)
2.9
ACC (48)
3.3
CAR B (49)
1.9 (0)
C EMP (50)
2.9 (2.8)
PB C RF (51)
2.2
REC C RF (52)
COMB IN C (53)
0.8 (0.6)
COMB OUT C (54)
3.2
1-619-918-
11
2
3
4
5
6
7

VC-10 BOARD (SIDE A)


CE TRAP 1 (1)
CE TRAP 2 (2)
DUB AREA (4)
SEL 1 (5)
SEL 2 (6)
REF V (7)
VD (8)
SV 3.58V (10)
JOG (11)
AGC P (12)
VI SWP (13)
VIDEO MUTE (14)
C SYNC (15)
VA PB MODE (16)
REG 5V 2 (19)
GND 2 (21)
GND 1 (22)
PILOT PULSE (24)
REG 5V 1 (26)
R041 5.6k
C046 0.01
C002 0.01
R043 560
R044 560
C003 0.1/35V
C004 0.33/35V
R047 100k
C043 0.047
R009 47k
IC001
16
9
1
8
C041 100p
C001 330p
C027 0.001
C047 47p
C048 47p
C008 33p
C044 6.8/6.3V
R048 10k
R053 0
R002 10k
C028 330p
C026 2.2/6.3V
R029 3.9k
C042 330p
R005 10k
R033 470
R049 470
C024 2.2/6.3V
R028 2.7k
C018 0.047
C040 0.047
C015 47p
R014 47k
R046 1.2k
C036 0.0033
C019 1/16V
R037 560
L003 100µH
R036 4.7k
C020 0.001
C021 0.22/35V
C014 0.01
R013 560k
R012 390
R008 10k
C012 68p
R038 2.2k
C035 82p
R024 3.9k
R022 100k
R023 10k
Q002
R016 1k
C023 0.001
R010 4.7k
R015 3.3k
C006 0.001
C005 15p
R050 1M
R003 4.7k
C045 47p
R040 2.2k
C022 2.2/6.3V
C011 0.022
R052 0
L001 33µH
Q001
C013 0.01
C007 47p
R025 22k
R026 1.2k
C009 2.2/6.3V
R019 12k
C017 330p
D001
R042 220
R020 1k
C010 6.8/6.3V
R018 4.7k
C016 33p
R017 1.5k
R004 47k
COMB OUT C (54)
COMB IN C (53)
REC C RF (52)
PB C RF (51)
C EMP (50)
CAR B (49)
ACC (48)
VCO ADJ (47)
CAR (45)
H SYNC (37)
SYSTEM R (36)
ACK DC (35)
BURST P (34)
ACK C (33)
1-619-918-
11
8
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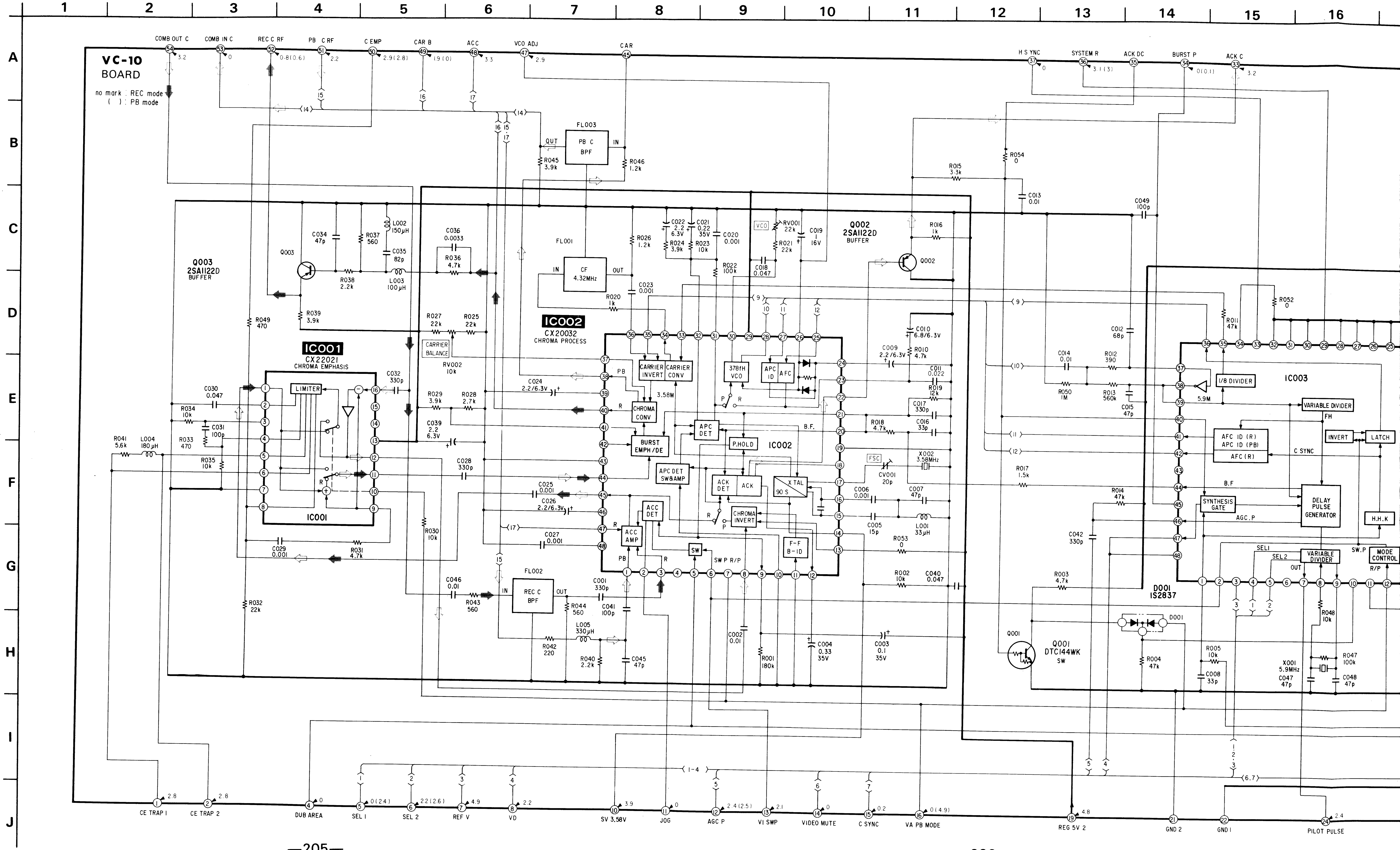
10
11
12
13
14

VC-10 (CHROMA SIGNAL PROCESS) SCHEMATIC DIAGRAM


1
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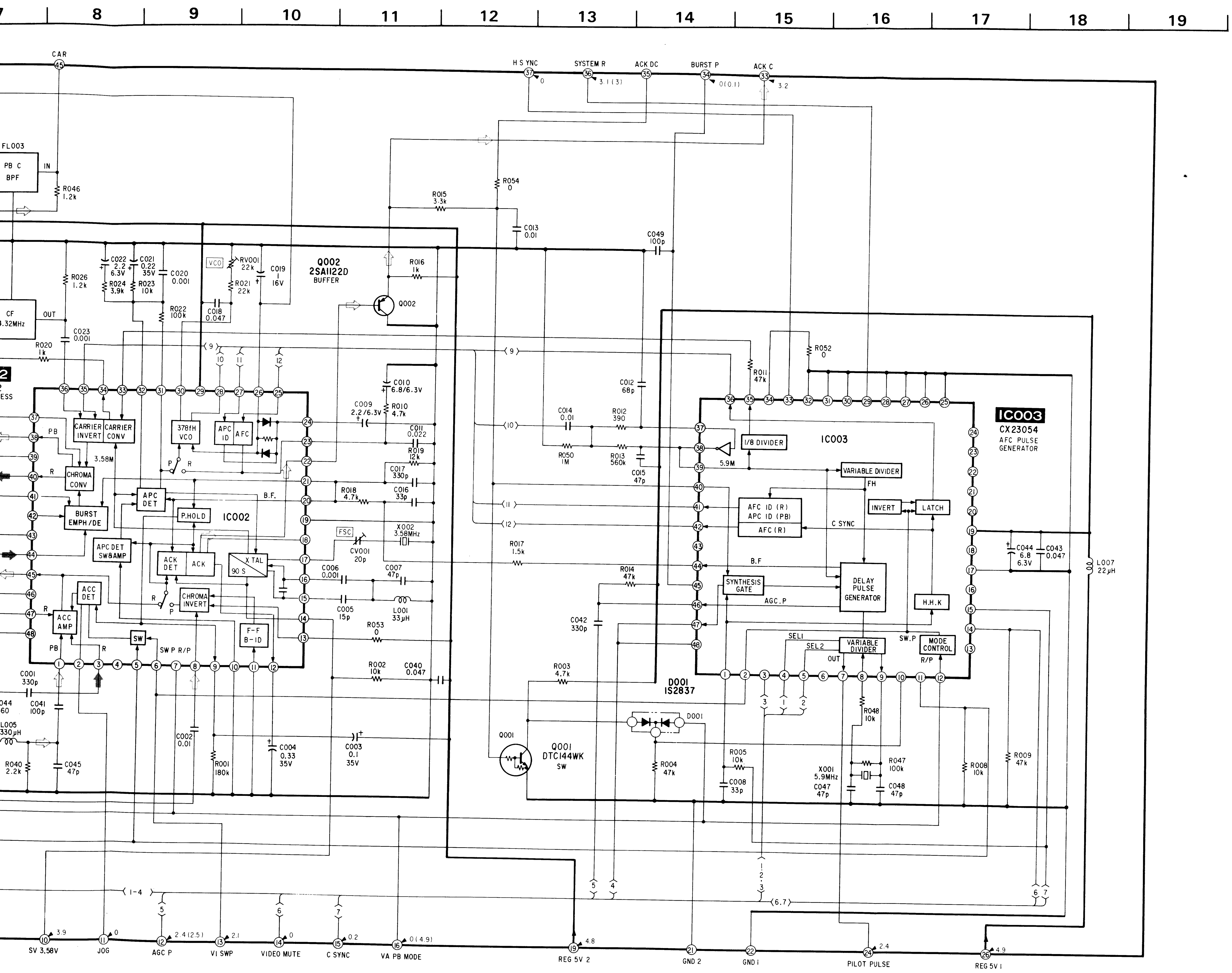
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
VC-10 BOARD
no mark : REC mode
( ) : PB mode
COMB OUT C
COMB IN C
REC C RF
PB C RF
C EMP
CAR B
ACC
VCO ADJ
CAR
H SYNC
SYSTEM R
ACK DC
BURST P
ACK C
IC001
CX22021
CHROMA EMPHASIS
LIMITER
IC002
CX20032
CHROMA PROCESS
IC003
Q003
2SA1122D
BUFFER
Q002
2SA1122D
BUFFER
Q001
DTC144WK
SW
D001
1S2837
FL001
CF
4.32MHz
FL002
REC C BPF
FL003
PB C BPF
CARRIER INVERT
CARRIER CONV
378fH VCO
APC ID
AFC
CHROMA CONV
BURST EMPH/DE
APC DET
P.HOLD
APC DET SW&AMP
ACK DET
ACK
X TAL
90 S
CHROMA INVERT
ACC DET
ACC AMP
SW
F-F B-ID
SW P R/P
3.58M
B.F.
CARRIER BALANCE
RV002 10k
RV001 22k
VCO
FSC
CV001 20p
X002 3.58MHz
1/8 DIVIDER
5.9M
VARIABLE DIVIDER
FH
INVERT
LATCH
AFC ID (R)
AFC ID (PB)
AFC (R)
C SYNC
B.F
SYNTHESIS GATE
AGC.P
DELAY PULSE GENERATOR
H.H.K
SELI
SEL 2
VARIABLE DIVIDER
OUT
SW.P
MODE CONTROL
R/P
X001 5.9MHz
CE TRAP 1
CE TRAP 2
DUB AREA
SEL 1
SEL 2
REF V
VD
SV 3.58V
JOG
AGC P
V1 SWP
VIDEO MUTE
C SYNC
VA PB MODE
REG 5V 2
GND 2
GND 1
PILOT PULSE


8
9
10
11
12
13
14
15
16
17
18
19
CAR
H SYNC
SYSTEM R
ACK DC
BURST P
ACK C
FL003
PB C BPF
CF 3.32MHz
Q002
2SA1122D
BUFFER
IC002
CARRIER INVERT
CARRIER CONV
378fH VCO
APC ID
AFC
CHROMA CONV
BURST EMPH/DE
APC DET
P.HOLD
APC DET SW8AMP
ACK DET
ACK
X TAL 90 S
ACC DET
ACC AMP
SW
CHROMA INVERT
F-F B-ID
IC003
CX23054
AFC PULSE GENERATOR
1/8 DIVIDER
VARIABLE DIVIDER
AFC ID (R)
APC ID (PB)
AFC (R)
INVERT
LATCH
C SYNC
B.F
SYNTHESIS GATE
AGC.P
DELAY PULSE GENERATOR
H.H.K
SW.P
MODE CONTROL
R/P
SEL1
SEL2
VARIABLE DIVIDER
OUT
Q001
DTC144WK
SW
D001
1S2837
X001
5.9MHz
L007
22μH
SV 3.58V
JOG
AGC P
V1 SWP
VIDEO MUTE
C SYNC
VA PB MODE
REG 5V 2
GND 2
GND 1
PILOT PULSE
REG 5V 1

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)

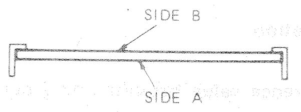
- **Signal path**

  ➡ :REC CHROMA SIGNAL

  ⇨ :PB CHROMA SIGNAL

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (VD-5: Q001, 002) transistor with resistors. Refer to the VD-5 board schematic diagram for digital transistor.

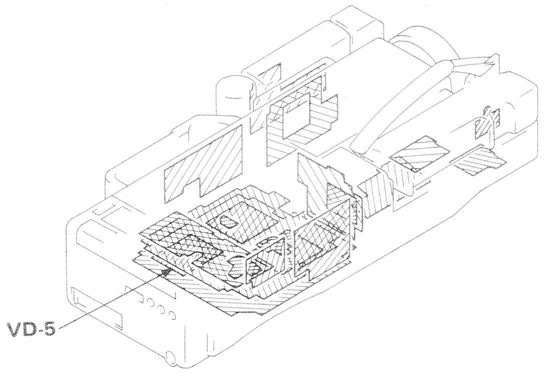

SIDE B
SIDE A

Note

Soldering side: (SIDE A)	**Parts on the soldering side being seen from the soldering are stated.**
Component side: (SIDE B)	**Parts on the component side being seen from the component are stated.**

Regarding color indication of patterns

- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.



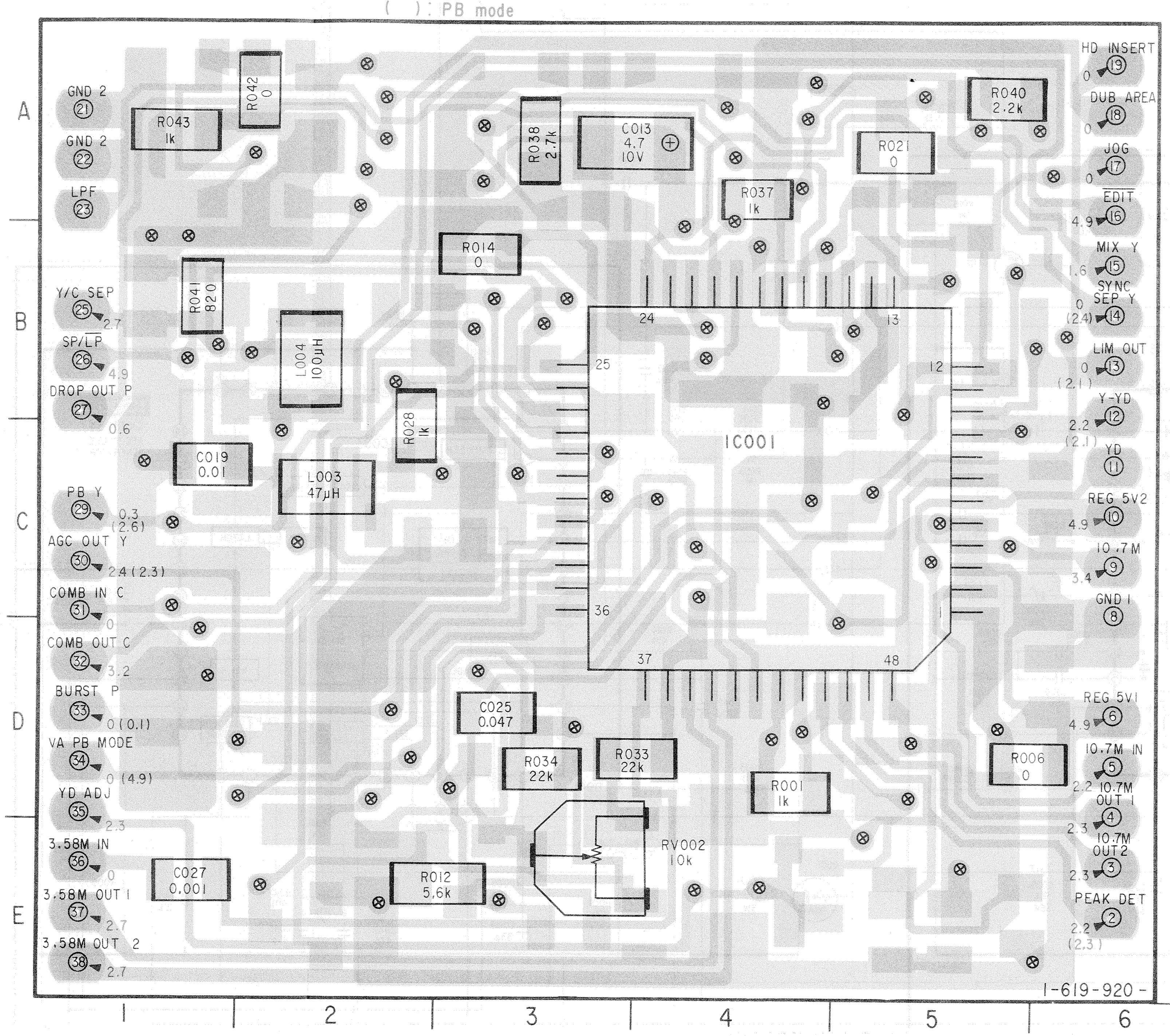
VD-5 BOARD (COMB FILTER) PRINTED WIRING BOARD

VD-5 BOARD

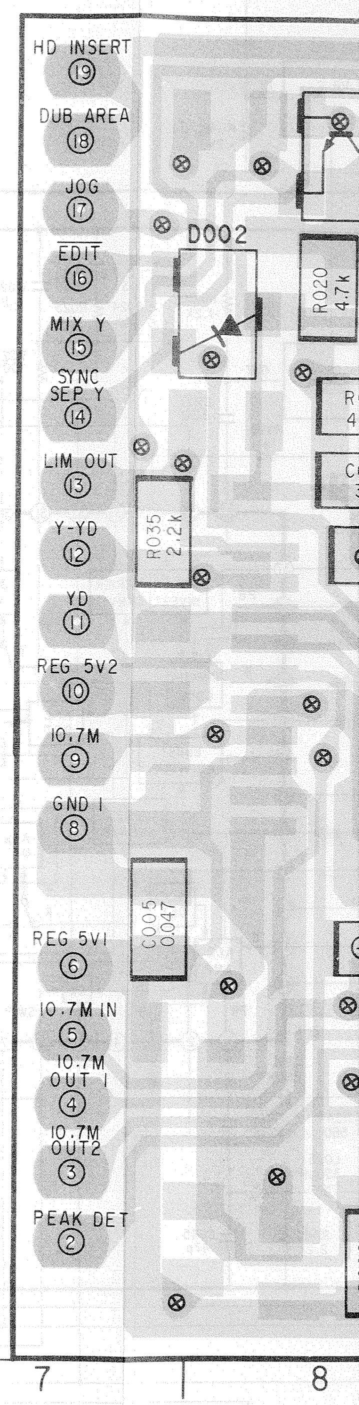
D001	E-11
D002	B-8
IC001	C-4
Q001	D-10
Q002	E-10
Q003	A-8
RV002	E-3

VD-5 BOARD (SIDE B)

no mark : REC mode
( ) : PB mode

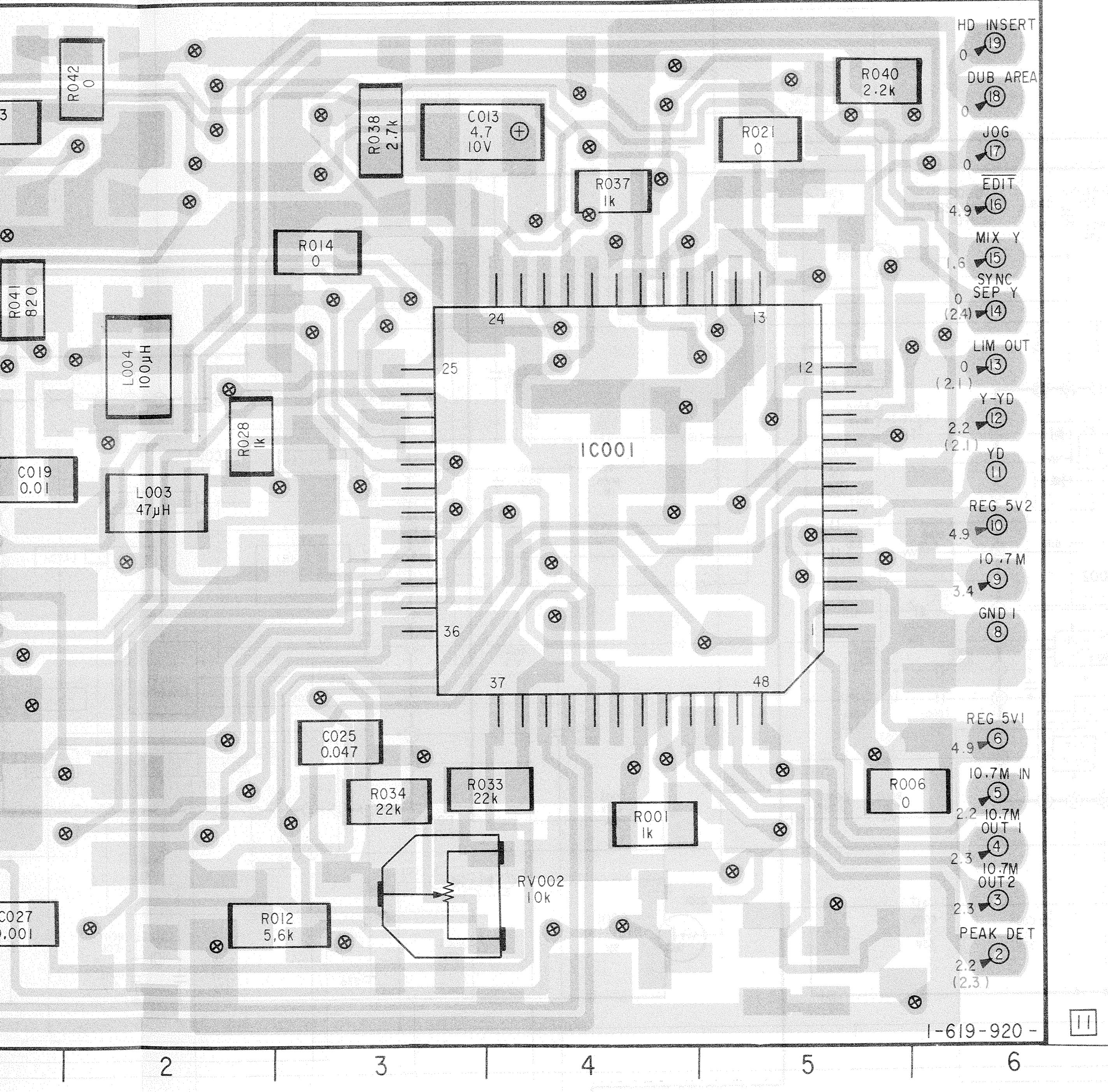

A
B
C
D
E
1
2
3
4
5
6
GND 2 ㉑
GND 2 ㉒
LPF ㉓
Y/C SEP ㉕ 2.7
SP/LP ㉖ 4.9
DROP OUT P ㉗ 0.6
PB Y ㉙ 0.3 (2.6)
AGC OUT Y ㉚ 2.4 (2.3)
COMB IN C ㉛ 0
COMB OUT C ㉜ 3.2
BURST P ㉝ 0 (0.1)
VA PB MODE ㉞ 0 (4.9)
YD ADJ ㉟ 2.3
3.58M IN ㊱ 0
3.58M OUT 1 ㊲ 2.7
3.58M OUT 2 ㊳ 2.7
HD INSERT ⑲ 0
DUB AREA ⑱ 0
JOG ⑰ 0
EDIT ⑯ 4.9
MIX Y ⑮ 1.6
SYNC SEP Y ⑭ 0 (2.4)
LIM OUT ⑬ 0 (2.1)
Y-YD ⑫ 2.2 (2.1)
YD ⑪
REG 5V2 ⑩ 4.9
10.7M ⑨ 3.4
GND 1 ⑧
REG 5V1 ⑥ 4.9
10.7M IN ⑤ 2.2
10.7M OUT 1 ④ 2.3
10.7M OUT2 ③ 2.3
PEAK DET ② 2.2 (2.3)
R043 1k
R042 0
R041 820
L004 100μH
C019 0.01
L003 47μH
R028 1k
R014 0
R038 2.7k
C013 4.7 10V
R037 1k
R021 0
R040 2.2k
IC001
24
13
25
12
36
1
37
48
C025 0.047
R034 22k
R033 22k
R001 1k
R006 0
RV002 10k
R012 5.6k
C027 0.001
1-619-920-
11

VD-5 BOARD (SIDE

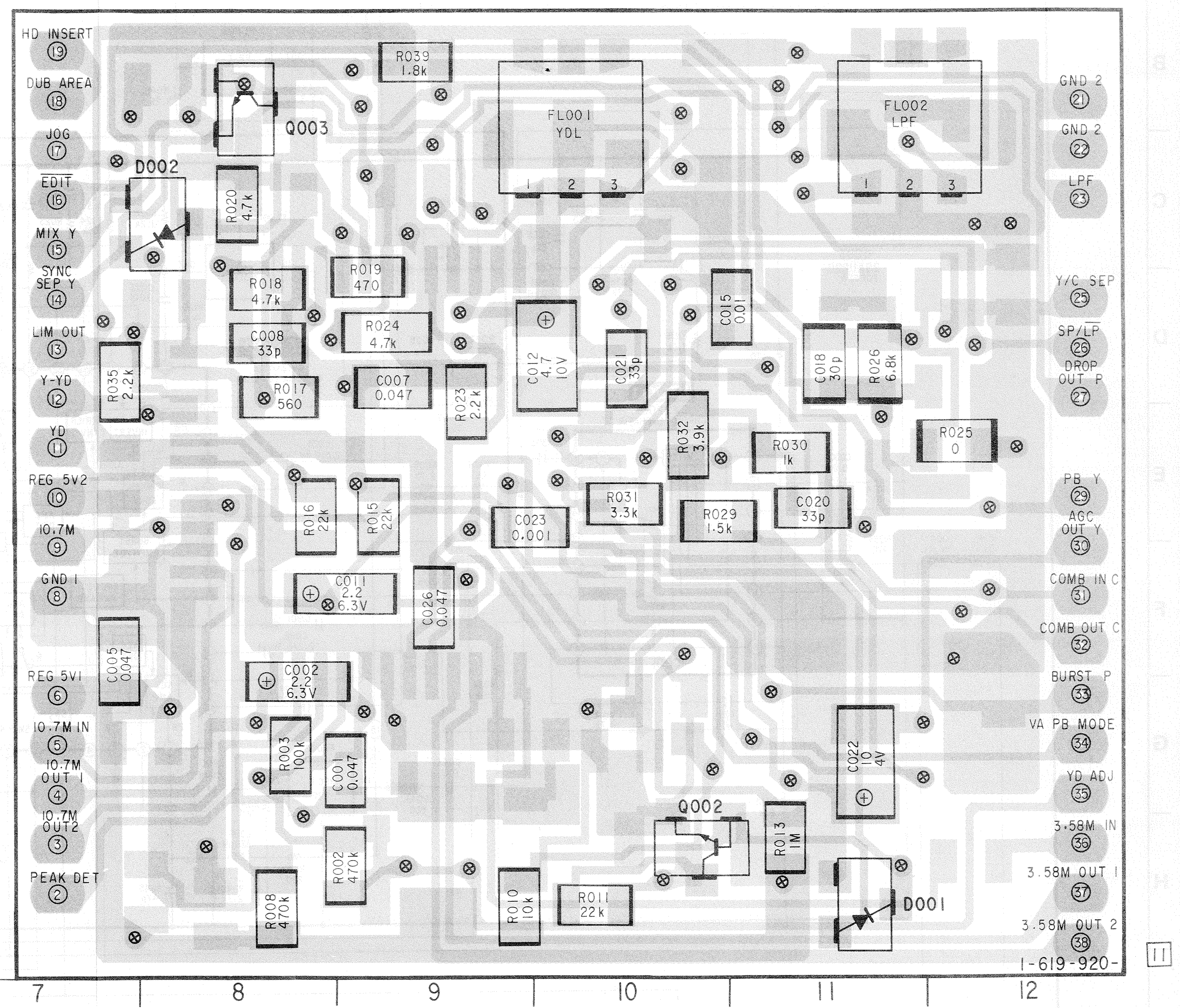

HD INSERT ⑲
DUB AREA ⑱
JOG ⑰
EDIT ⑯
MIX Y ⑮
SYNC SEP Y ⑭
LIM OUT ⑬
Y-YD ⑫
YD ⑪
REG 5V2 ⑩
10.7M ⑨
GND 1 ⑧
REG 5V1 ⑥
10.7M IN ⑤
10.7M OUT 1 ④
10.7M OUT2 ③
PEAK DET ②
D002
R020 4.7k
R035 2.2k
C005 0.047
7
8

RD (SIDE B)

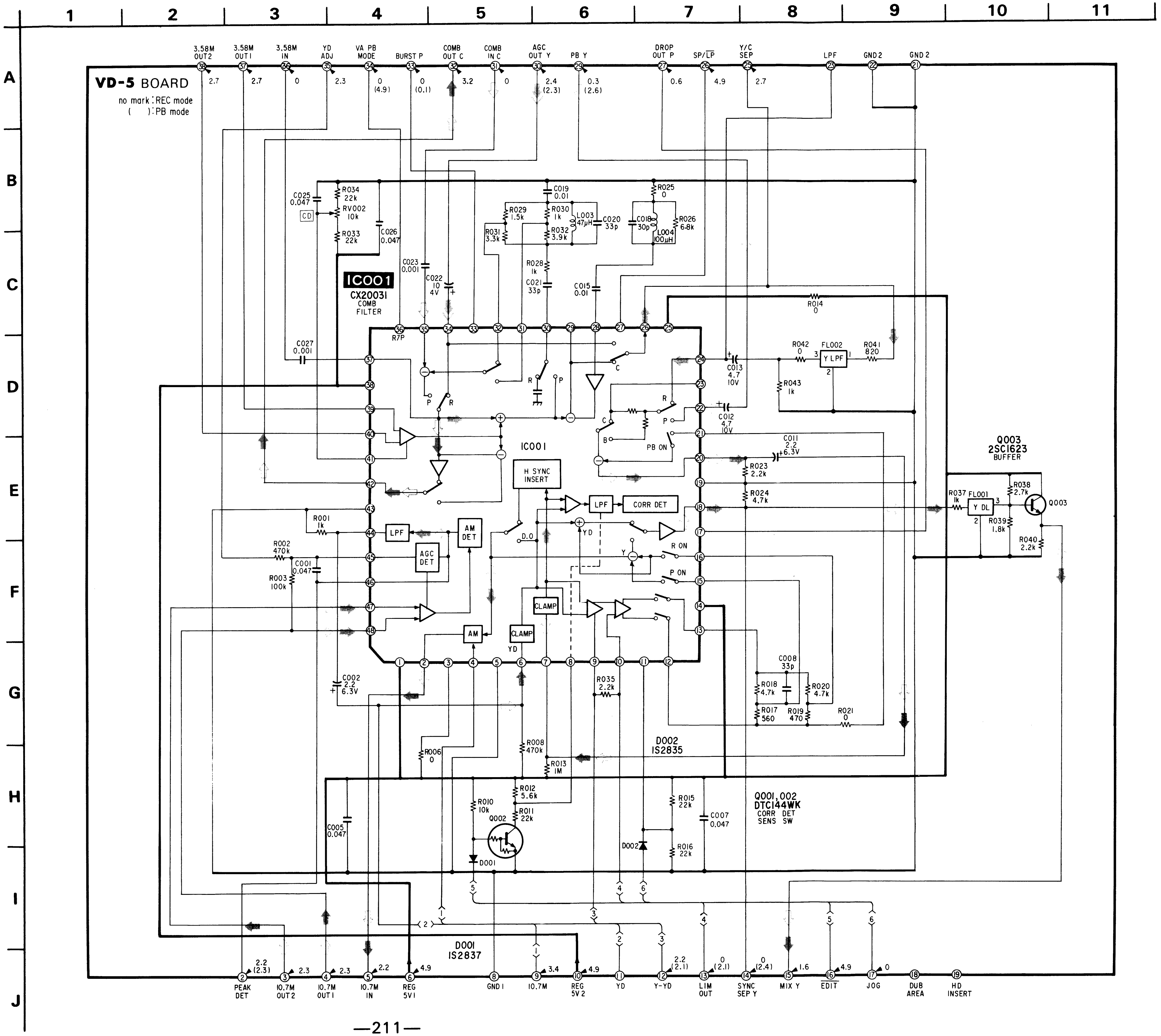
no mark : REC mode
( ) : PB mode


HD INSERT ⑲
DUB AREA ⑱
JOG ⑰
EDIT ⑯
MIX Y ⑮
SYNC SEP Y ⑭
LIM OUT ⑬
Y-YD ⑫
YD ⑪
REG 5V2 ⑩
10.7M ⑨
GND 1 ⑧
REG 5V1 ⑥
10.7M IN ⑤
10.7M OUT 1 ④
10.7M OUT2 ③
PEAK DET ②
IC001
R042 0
R038 2.7k
C013 4.7 10V
R037 1k
R021 0
R040 2.2k
R014 0
R041 820
L004 100μH
R028 1k
C019 0.01
L003 47μH
C025 0.047
R034 22k
R033 22k
R001 1k
R006 0
RV002 10k
R012 5.6k
C027 0.001
1-619-920-
11
2
3
4
5
6

VD-5 BOARD (SIDE A)


HD INSERT ⑲
DUB AREA ⑱
JOG ⑰
EDIT ⑯
MIX Y ⑮
SYNC SEP Y ⑭
LIM OUT ⑬
Y-YD ⑫
YD ⑪
REG 5V2 ⑩
10.7M ⑨
GND 1 ⑧
REG 5V1 ⑥
10.7M IN ⑤
10.7M OUT 1 ④
10.7M OUT2 ③
PEAK DET ②
GND 2 ㉑
GND 2 ㉒
LPF ㉓
Y/C SEP ㉕
SP/LP ㉖
DROP OUT P ㉗
PB Y ㉙
AGC OUT Y ㉚
COMB IN C ㉛
COMB OUT C ㉜
BURST P ㉝
VA PB MODE ㉞
YD ADJ ㉟
3.58M IN ㊱
3.58M OUT 1 ㊲
3.58M OUT 2 ㊳
Q003
D002
R039 1.8k
FL001 YDL
FL002 LPF
R020 4.7k
R018 4.7k
R019 470
C008 33p
R024 4.7k
R017 560
C007 0.047
R035 2.2k
R023 2.2k
C012 4.7 10V
C021 33p
C015 0.01
R032 3.9k
C018 30p
R026 6.8k
R025 0
R030 1k
R031 3.3k
R029 1.5k
C020 33p
R016 22k
R015 22k
C023 0.001
C011 2.2 6.3V
C026 0.047
C005 0.047
C002 2.2 6.3V
R003 100k
C001 0.047
C022 10 4V
Q002
R013 1M
D001
R002 470k
R008 470k
R010 10k
R011 22k
1-619-920-
11
7
8
9
10
11
12

VD-5 BOARD (COMB FILTER) SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
VD-5 BOARD
no mark : REC mode
( ) : PB mode
3.58M OUT2
3.58M OUT1
3.58M IN
YD ADJ
VA PB MODE
BURST P
COMB OUT C
COMB IN C
AGC OUT Y
PB Y
DROP OUT P
SP/LP
Y/C SEP
LPF
GND 2
GND 2
IC001
CX20031
COMB FILTER
R7P
H SYNC INSERT
LPF
CORR DET
AM DET
AGC DET
AM
CLAMP
CLAMP
YD
R ON
P ON
PB ON
Y LPF
FL002
Y DL
FL001
Q003
2SC1623
BUFFER
Q002
D001
D002
1S2835
D001
1S2837
Q001,002
DTC144WK
CORR DET
SENS SW
PEAK DET
10.7M OUT2
10.7M OUT1
10.7M IN
REG 5V1
GND1
10.7M
REG 5V2
YD
Y-YD
LIM OUT
SYNC SEP Y
MIX Y
EDIT
JOG
DUB AREA
HD INSERT

Note (Schematic Diagram):

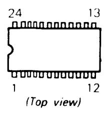
- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance. kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ▭ : panel designation.
- ▭ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)

- **Signal path**

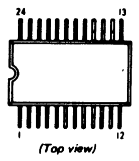
  ➔ :REC Y SIGNAL
  ➔ :PB Y SIGNAL
  ➔ :REC CHROMA SIGNAL
  ➔ :PB CHROMA SIGNAL
  ➔ :REC Y & CHROMA SIGNAL

4-3. SEMICONDUCTORS

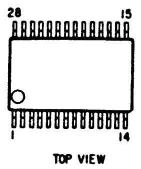
AN2510S


24
13
1
12
(Top view)

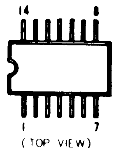
CX20114
CX20180
µPD6105G
µPD6107G


24
13
1
12
(Top view)

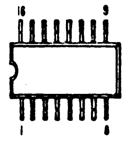
CXD1030M


28
15
1
14
TOP VIEW

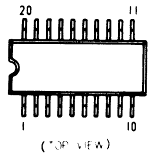
TC4066BF
µPC324G2
µPD4066BG
µPD4069UBG
µPD74HC02G
µPD74HC04G


14
8
1
7
(TOP VIEW)

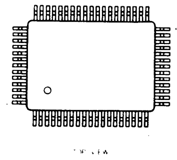
BA6303F
CX20115A
CX22021
TC4052BF
TC4526BF
µPD4053BG
µPD4538BG
µPD74H157G
µPD74H174G



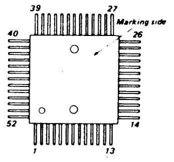
CX7991


20
11
1
10
(TOP VIEW)

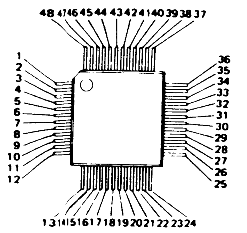
CXP5048H-021Q
CXP5048H-026Q
µPD7502G



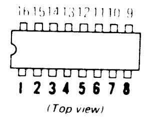
µPD7508G


39
27
Marking side
40
26
52
14
1
13

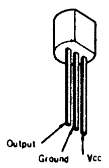
CX20030
CX20031
CX20032
CX20034
CX20037A
CX20053
CX20055
CX20056
CX20151
CX23047B
CX23054
CXD1073Q


48 47 46 45 44 43 42 41 40 39 38 37
1
2
3
4
5
6
7
8
9
10
11
12
36
35
34
33
32
31
30
29
28
27
26
25
13 14 15 16 17 18 19 20 21 22 23 24

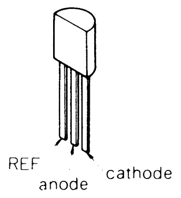
CXA1042M
MSM6411B-26GS-VK
TA7733F


16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
(Top view)

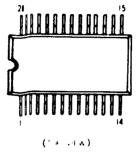
S-8054ALB


Output
Ground
Vcc

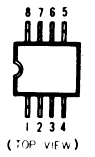
TL431CLPB


REF
anode
cathode

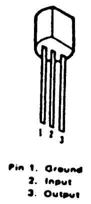
CX20035
CX20036
CX23039



CXB0026M
MB3763PF
µPC393G2
µPC4250G2


8 7 6 5
1 2 3 4
(TOP VIEW)

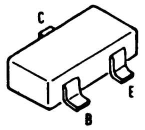
S-81250AG



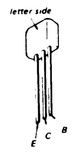
Pin 1. Ground
2. Input
3. Output

2SA1037K
2SA1122
2SA1162
2SA1226
2SA812
2SB624
2SC1623
2SC2223
2SC2412
2SC2712
2SC2757
2SC2812

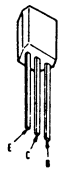
2SC3052
DTA114EK
DTA124EK
DTA144EK
DTA144TK
DTA144WK
DTC114EK
DTC124EK
DTC124XK
DTC143TK
DTC144EK
DTC144TK
DTC144WK



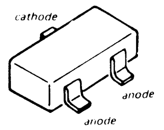
2SA1175
2SC2785


letter side
E
C
B

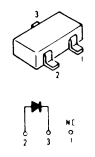
2SC2458
2SC2603



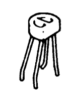
1S2837
DAN202K
MA151WK
MA152WK
MA157


cathode
anode
anode

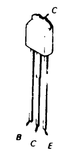
1SS193
1S220
E10DS2
E10QS03
RD5.1M-B3
RD10M-B2
RD12M-B2



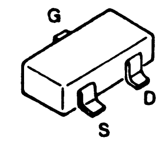
GP-2S09-B



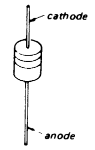
2SA1385



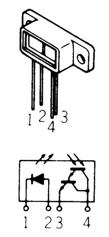
2SK94
2SK160
2SK209
2SK209G
2SK303



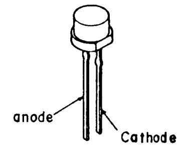
1SS119
1SS133
1SS148


cathode
anode

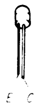
1SS196



TLR147


anode
Cathode

NJL7141E-S



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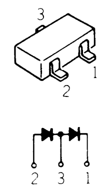
MA153



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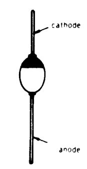
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anode

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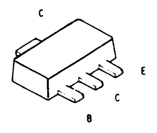
2SD1664



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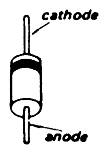
1S2471VE
HZ4ALL
RD8.2EB
RD13EB1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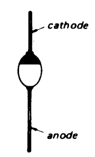
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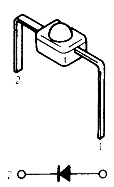
GL-1HY102



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2SD999
2SD1366
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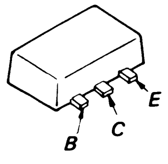
2SD1615A



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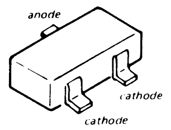
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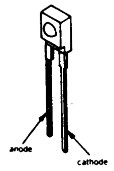
GL-450S


anode
cathode

SECTION 5
EXPLODED VIEWS

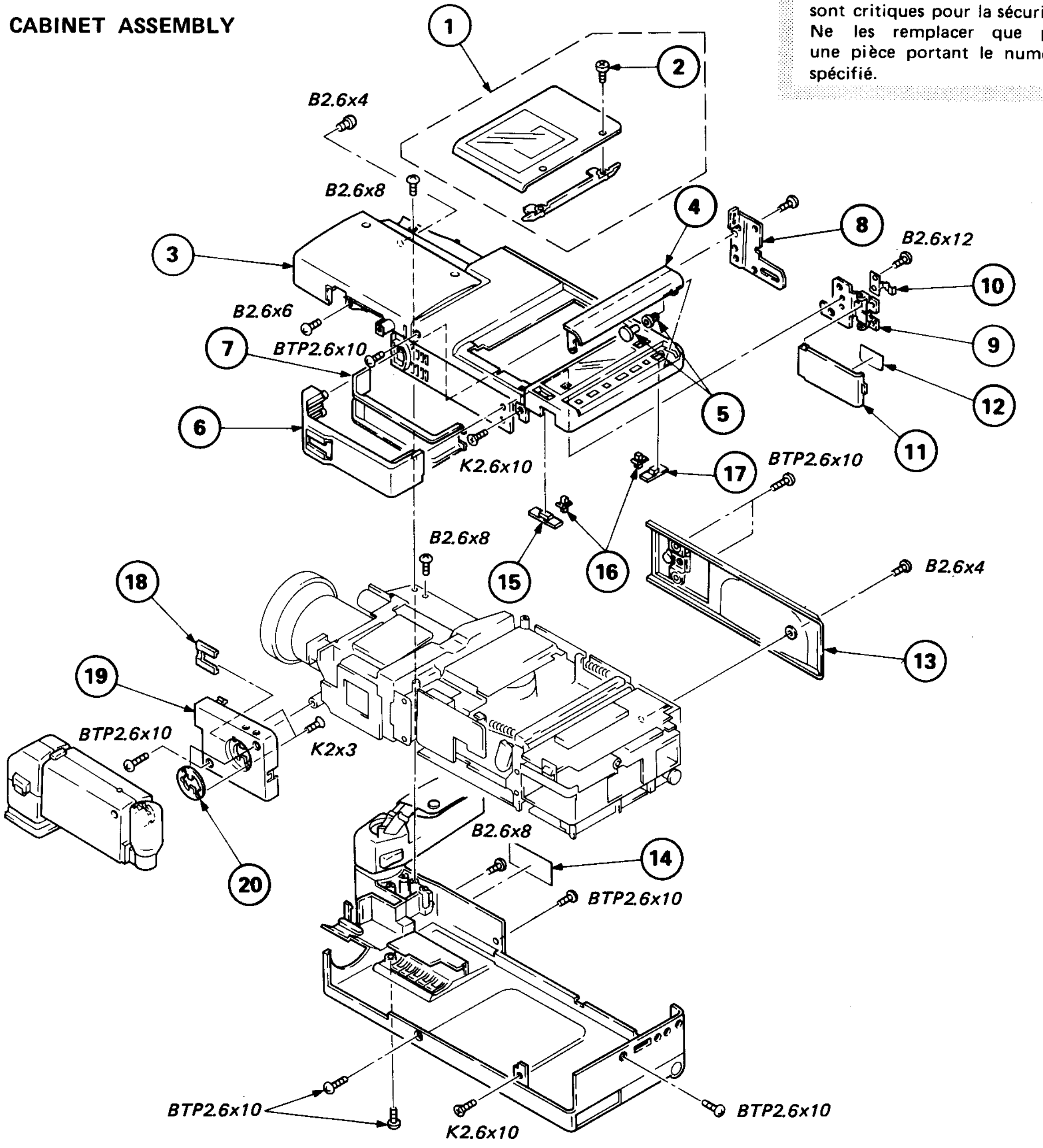
NOTE:

- Itmes with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

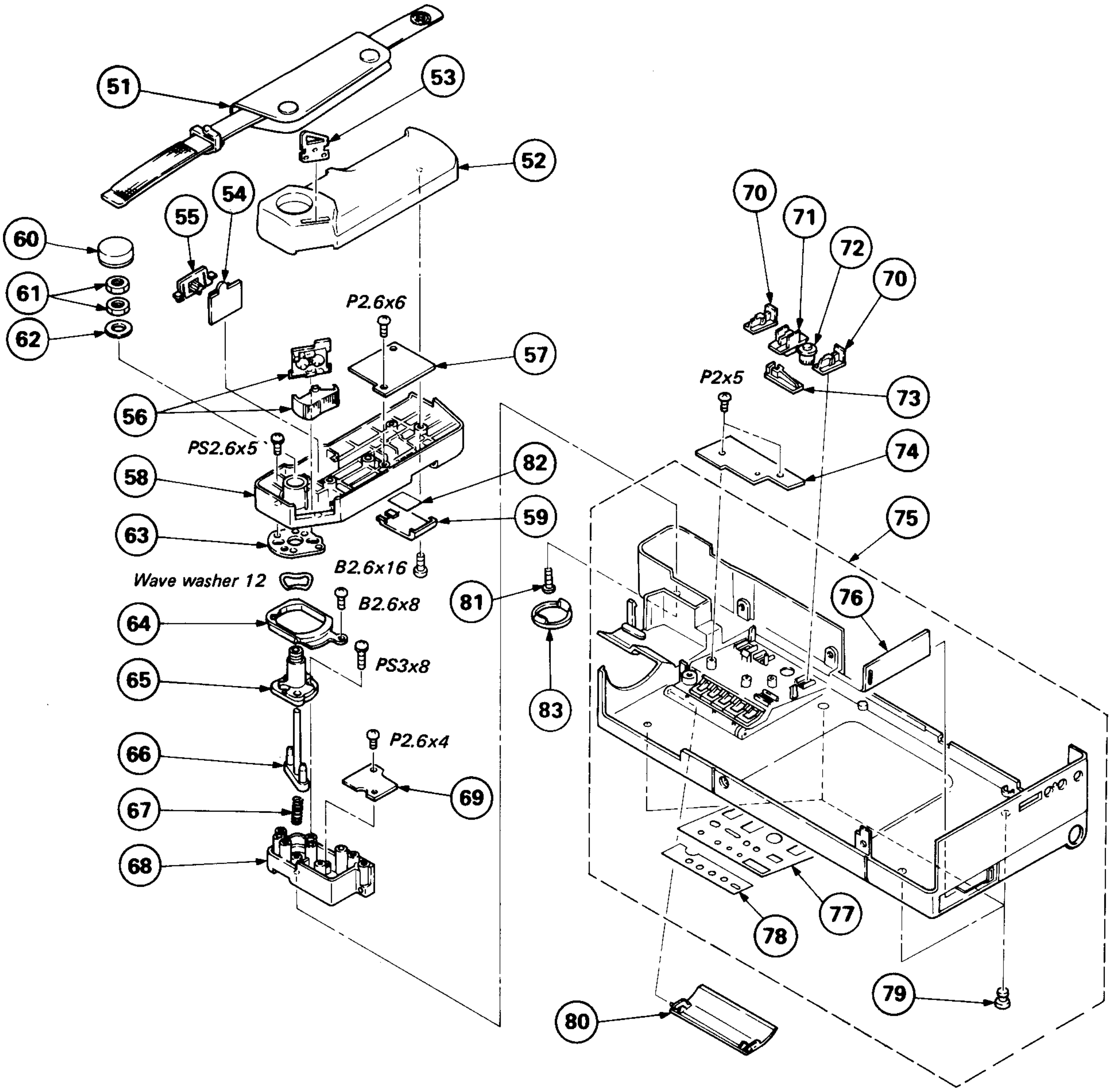
5-1. CABINET ASSEMBLY



1
2
B2.6x4
B2.6x8
4
8
B2.6x12
10
3
B2.6x6
7
BTP2.6x10
9
12
6
5
K2.6x10
11
17
BTP2.6x10
B2.6x8
18
15
16
B2.6x4
13
19
BTP2.6x10
K2x3
20
B2.6x8
14
BTP2.6x10
BTP2.6x10
K2.6x10
BTP2.6x10

No.	Part No.	Description	Remark
1	X-3686-870-1	LID ASSY, CASSETTE	2
2	3-712-679-01	SCREW (2X5), TAPPING	
3	X-3686-898-1	CABINET (L) ASSY	
4	*3-712-692-01	DOOR, FUNCTION	
5	3-531-576-31	RIVET, NILON	
6	3-712-585-01	HANDLE	
7	3-712-584-01	HANDLE (LOWER)	
8	*3-712-636-01	SUPPORT (A), HANDLE	
9	*3-712-637-01	SUPPORT (B), HANDLE	
10	3-712-638-01	PLATE, CLICK, BA	
11	3-712-583-01	LID, BATTERY	
12	3-712-640-01	LABEL, BATTERY PICK	
13	X-3686-869-1	CABINET (BOTTOM) ASSY	
14	*3-721-328-01	LABEL,MODEL NUMBER (U)	
15	3-713-578-01	KNOB, EJECT	
16	3-713-538-01	KNOB, EDIT	
17	3-713-577-01	KNOB, REC	
18	*3-712-647-01	SUPPORT, EVF ROTARY SHAFT	
19	3-712-619-01	CABINET (UPPER)	
20	3-712-676-01	PLATE, CLICK	

5-2. CABINET (R) AND GRIP ASSEMBLY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52
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62
P2.6x6
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56
PS2.6x5
58
82
59
63
B2.6x16
Wave washer 12
B2.6x8
81
64
PS3x8
83
65
P2.6x4
66
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67
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70
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72
70
P2x5
73
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75
76
77
78
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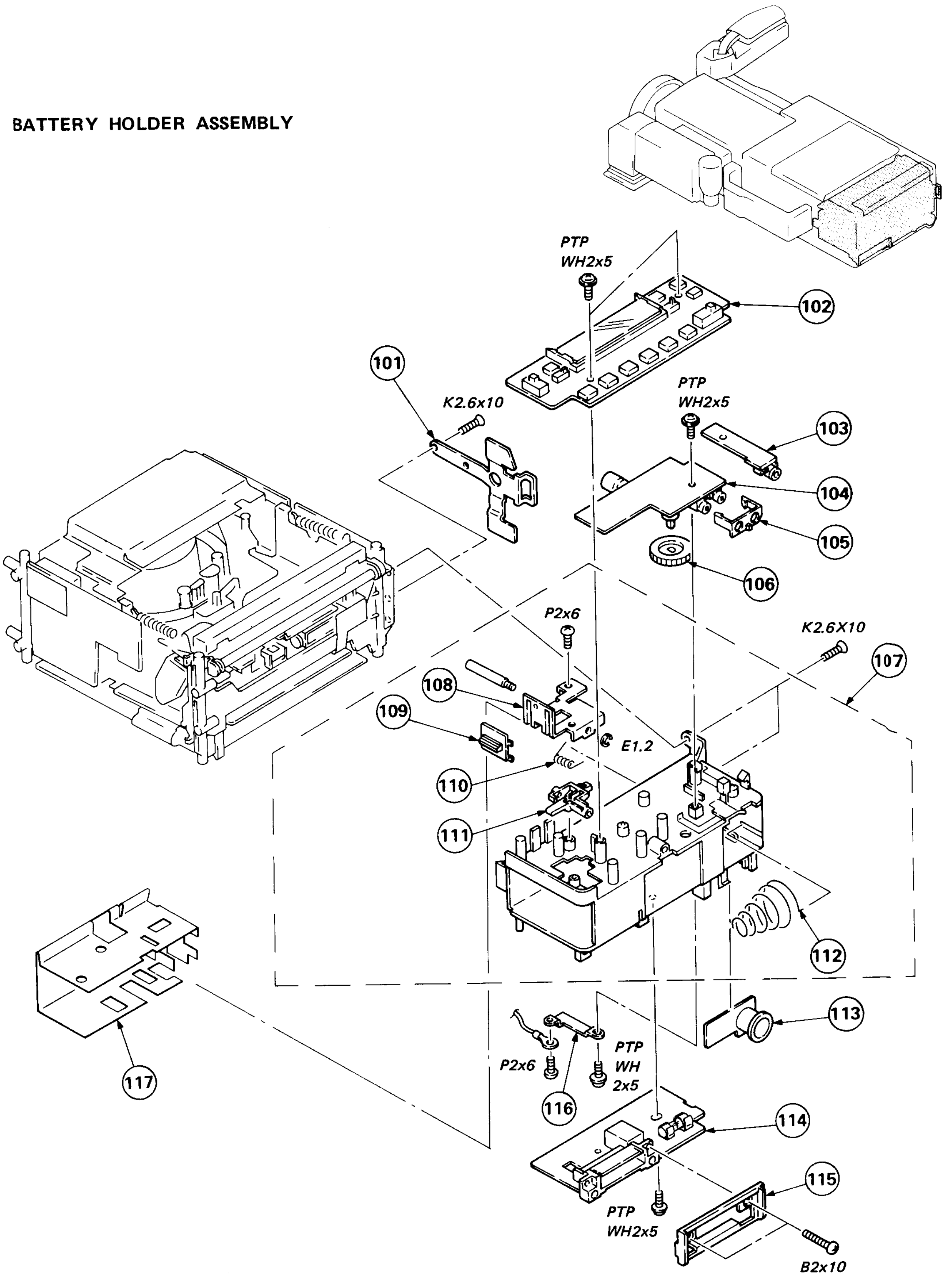
80

No.	Part No.	Description	Remark
51	3-712-621-01	BELT, GRIP	
52	3-712-604-01	GRIP (2)	
53	3-712-598-01	BRACKET, BELT	
54	*1-620-279-11	GS-2 BOARD	
55	3-712-599-01	BUTTON, SS	
56	1-570-785-11	SWITCH, PUSH (ZOOM)	
57	*1-620-159-11	LI-1 BOARD	
58	3-712-603-01	GRIP (1)	
59	3-712-601-01	LID, BATTERY CASE	
60	3-712-644-01	BUTTON, RELEASE	
61	3-712-653-01	NUT (M8), TUBE	
62	3-712-650-01	COLLAR	
63	3-712-675-01	RATCHET	
64	*3-712-618-01	PLATE, ORNAMENTAL, CABINET (R)	
65	X-3686-879-1	HOLDER ASSY, RATCHET	
66	X-3686-858-1	RETAINER ASSY	
67	3-534-235-00	SPRING, COMPRESSION	
68	*3-712-602-01	REINFORCEMENT, CABINET (L)	
69	*1-620-160-11	ZS-2 BOARD	
70	3-712-567-01	KNOB, AF	
71	3-712-568-01	KNOB, WB	
72	3-713-537-01	KNOB, IRIS	
73	3-712-578-01	KNOB, CP	
74	*1-620-154-11	TI-8 BOARD	
75	X-3686-866-1	CABINET (RIGHT) ASSY	76-79
76	3-713-502-01	DOOR	
77	3-712-682-01	PLATE, ORNAMENTAL, CONTROL BLOCK	
78	3-712-683-01	PLATE, ORNAMENTAL, SET BLOCK	
79	3-688-931-11	FOOT, RUBBER	
80	3-713-506-01	DOOR, SET	
81	3-714-003-01	B 4x10	
82	*3-713-573-01	LABEL, BATTERY REPLACEMENT	
83	3-712-600-01	PLATE, ORNAMENTAL, GRIP	

5-3. BATTERY HOLDER ASSEMBLY



PTP
WH2x5
102
101
K2.6x10
PTP
WH2x5
103
104
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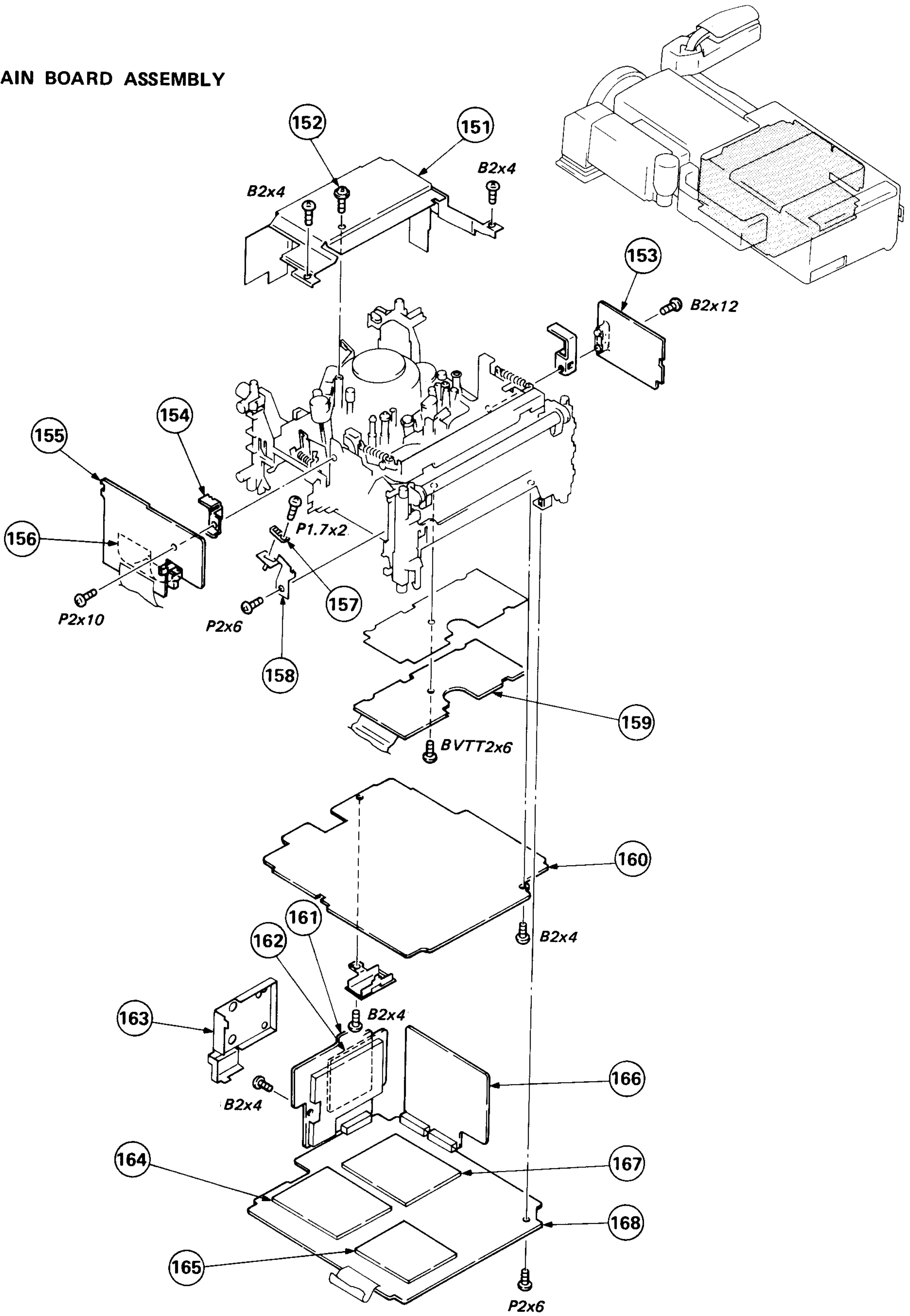
106
P2x6
K2.6X10
107
108
109
E1.2
110
111
112
113
117
P2x6
PTP
WH
2x5
116
114
115
PTP
WH2x5
B2x10

No.	Part No.	Description	Remark
101	3-712-606-01	PLATE (A), HOOK	
102	*A-7060-433-A	SK-12 BOARD, COMPLETE	
103	*1-620-158-11	EP-8 BOARD	
104	*A-7060-435-A	CC-6 BOARD, COMPLETE	
105	*3-712-608-01	MOLD, BLIND	
106	3-712-610-01	KNOB, SHARPNESS	
107	X-3686-865-1	HOLDER ASSY, BATTERY	108-112
108	3-712-581-01	BRACKET, RELEASE BUTTON	
109	3-712-614-01	BUTTON, LOCK RELEASE	
110	3-713-520-01	SPRING	
111	3-712-580-01	CLAW, BATTERY LOCK	
112	3-686-775-01	SPRING	
113	*1-620-155-11	RJ-2 BOARD	
114	*A-7050-434-A	SC-6 BOARD, COMPLETE	
115	*3-713-507-01	COVER	
116	*3-712-611-01	PLATE, GROUND, L	
117	*3-713-521-01	COVER, SHIELD	

5-4. MAIN BOARD ASSEMBLY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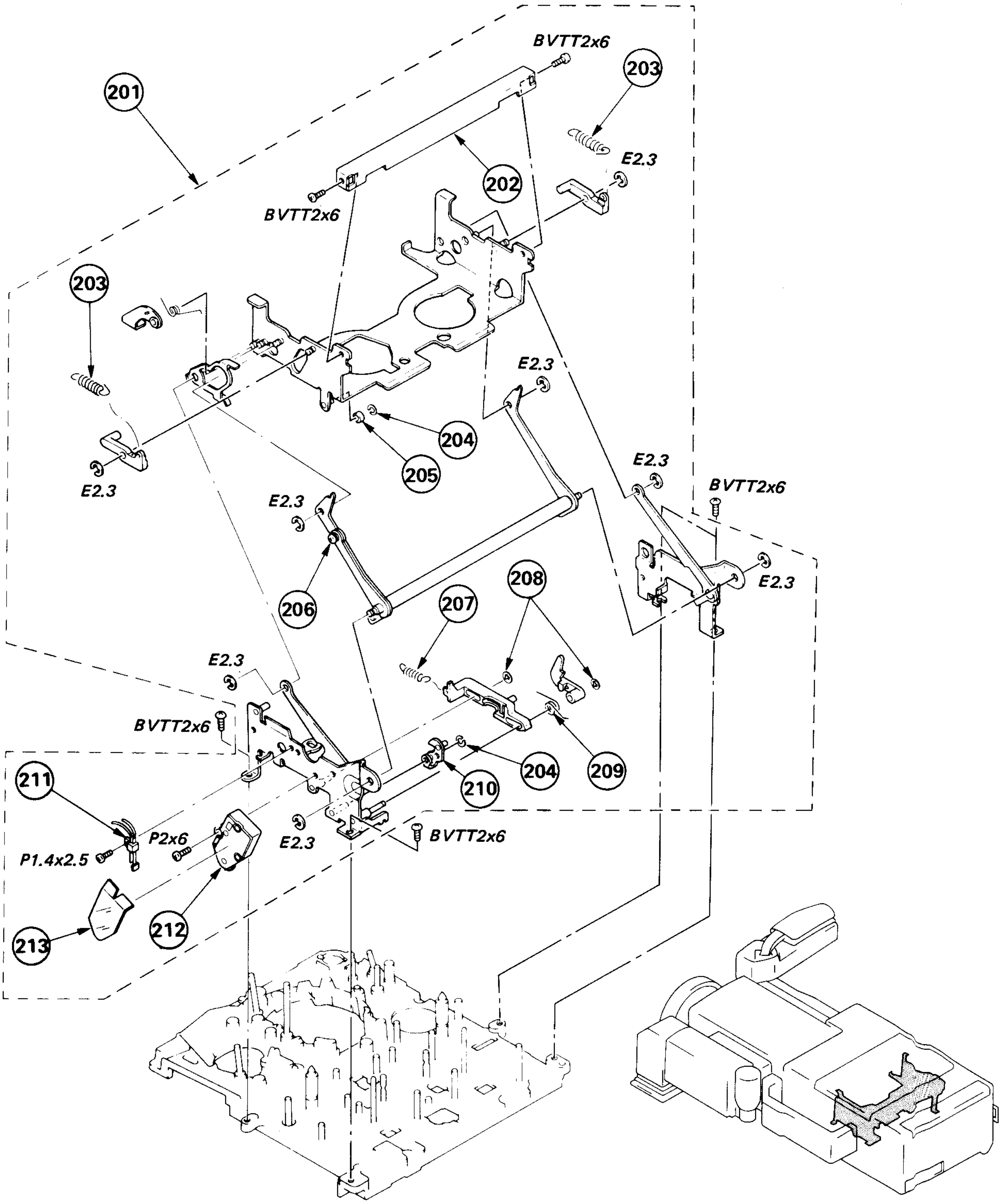
B2x4
B2x4
153
B2x12
154
155
156
P1.7x2
157
P2x10
P2x6
158
159
BVTT2x6
160
B2x4
161
162
B2x4
163
B2x4
166
164
167
168
165
P2x6

No.	Part No.	Description	Remark
151	*3-712-529-01	PLATE, SHIELD, MD	
152	3-703-502-31	SCREW	
153	*A-7060-541-A	TS-55 BOARD, COMPLETE	
154	*X-3686-837-1	HOLDER ASSY, END	
155	*A-7060-384-A	DR-36 BOARD, COMPLETE	156
156	A-7070-249-A	FP-20 BOARD, COMPLETE	
157	1-807-238-21	SENSOR, DEW CONDENSATION	
158	*3-712-674-01	BRACKET, DEW	
159	*A-7060-343-A	RS-18 BOARD, COMPLETE	
160	*A-7060-430-A	SS-64 BOARD, COMPLETE	
161	*A-7060-382-A	RP-39 BOARD, COMPLETE	162
162	*A-7068-043-A	RP-34 HIC BOARD, COMPLETE	
163	*X-3686-845-1	LID ASSY, UPPER, RP SHIELD	
164	A-7068-044-A	VY-8 HIC BOARD, COMPLETE	
165	A-7068-045-A	VD-5 HIC BOARD, COMPLETE	
166	*A-7060-571-A	AU-24 BOARD, COMPLETE	
167	A-7068-046-A	VC-10 HIC BOARD, COMPLETE	
168	*A-7060-570-A	VI-21 BOARD, COMPLETE	164, 165, 167

5-5. CASSETTE COMPARTMENT ASSEMBLY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BVTT2x6
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E2.3
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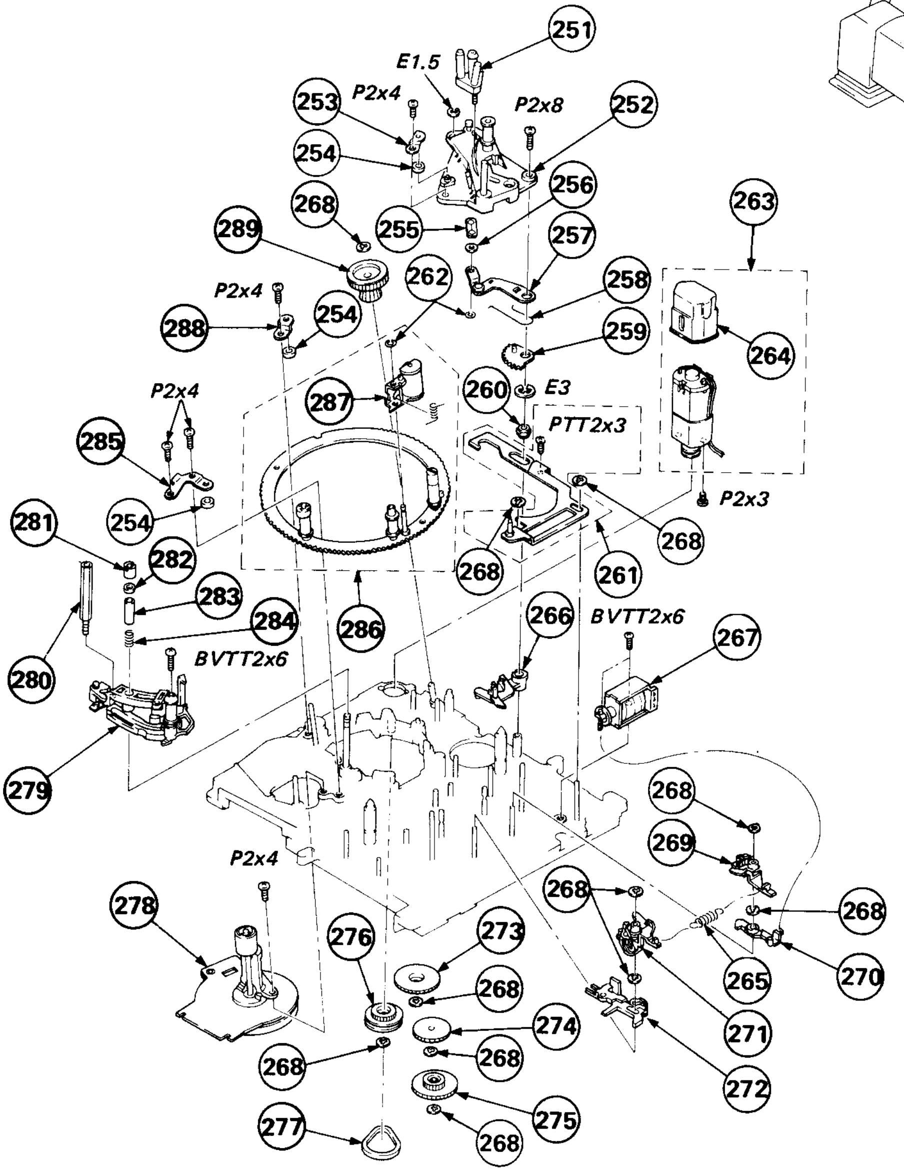
E2.3
E2.3
E2.3
BVTT2x6
E2.3
206
208
207
E2.3
BVTT2x6
211
204
209
210
P2x6
P1.4x2.5
E2.3
BVTT2x6
213
212

No.	Part No.	Description	Remark
201	A-7040-005-A	CASSETTE COMPARTMENT ASSY	202-213
202	3-686-718-01	REINFORCEMENT	
203	3-686-883-01	SPRING, TENSION	
204	3-578-265-11	WASHER, STOPPER	
205	*3-686-693-01	ROLLER, LOCK	
206	3-672-561-00	+PSW 2X4	
207	3-696-047-01	SPRING, TENSION	
208	3-669-465-00	WASHER (1.5), STOPPER	
209	3-686-694-01	SPRING, TORSION	
210	*X-3686-541-1	CLAW ASSY, LOCK	
211	1-553-226-00	SWITCH, LEAF (CASSETTE LOCK) S901	
212	*3-681-528-00	DAMPER	
213	*3-686-937-01	INSULATOR, DAMPER	

5-6. CHASSIS ASSEMBLY 1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P2x4
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E3
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P2x3
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286
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BVTT2x6
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BVTT2x6
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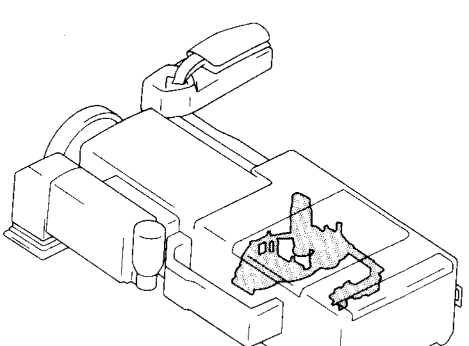
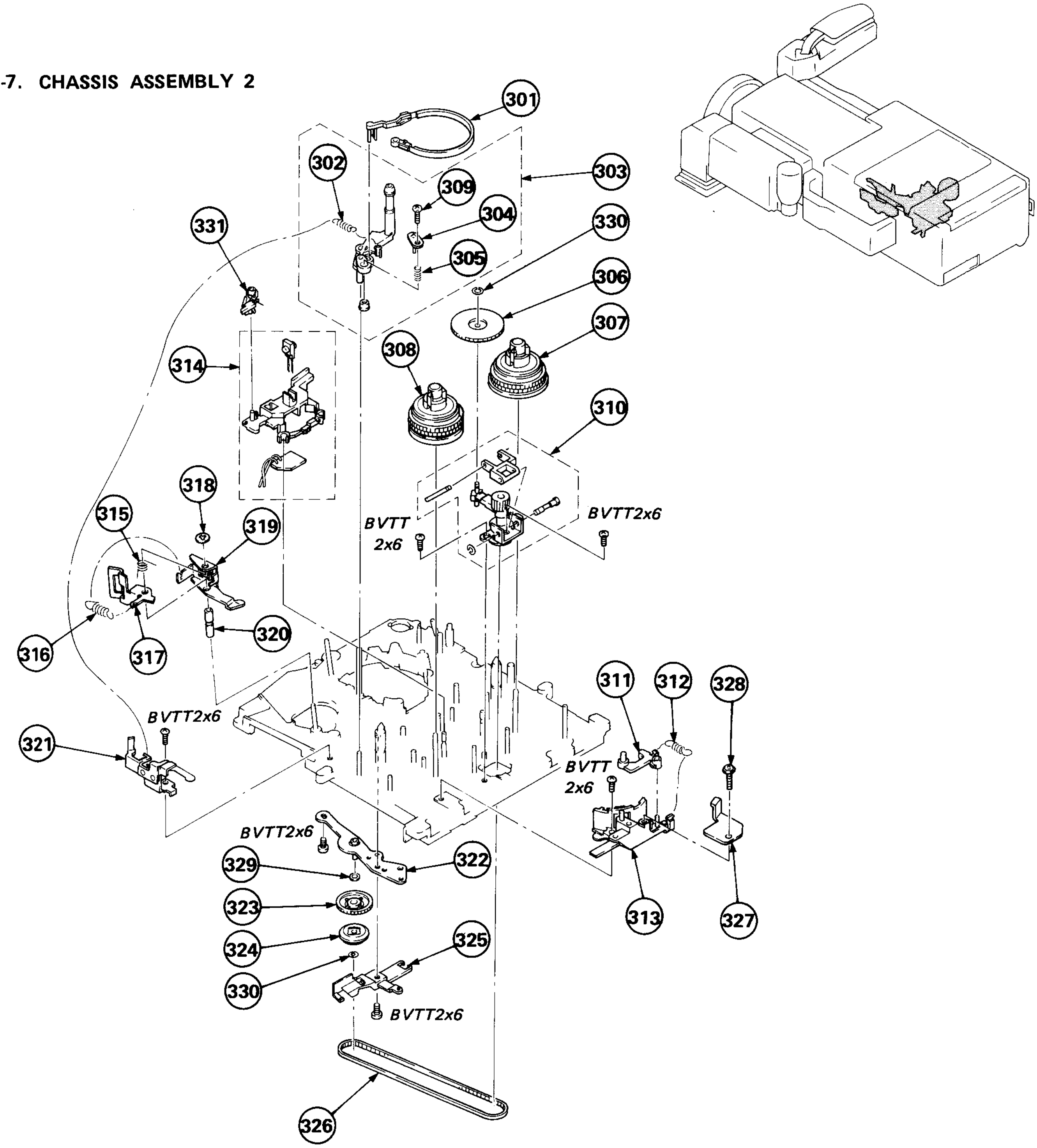


The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remark
251	X-3686-502-1	BASE ASSY, GUIDE	
252	X-3686-577-1	CHASSIS ASSY, GUIDE, SLANT	
253	*3-686-503-01	RETAINER, ROLLER	
254	3-697-538-01	ROLLER, RING	
255	3-686-663-01	WASHER, STOPPER, 2 GANG	
256	3-701-436-21	WASHER, POLYEHTHYLENE	
257	X-3686-537-1	ARM ASSY	
258	3-686-701-01	SPRING	
259	3-699-509-01	GEAR, SECTOR	
260	3-686-537-01	RETAINER, LOCK SLODER	
261	A-7040-072-A	SLIDER ASSY, LOCK	
262	3-315-384-31	WASHER, STOPPER	
263	A-7040-031-A	MOTOR ASSY, L (LOADING) M901	264
264	*3-686-757-01	CAP, SHIELD, L MOTOR	
265	3-686-882-01	SPRING, TENSION	
266	*3-686-636-01	ARM, T.S RELEASE	
267	⚠ 1-454-377-21	SOLENOID, PLUNGER PM901 (BRAKE)	
268	3-669-465-00	WASHER (1.5), STOPPER	
269	X-3686-574-1	BRAKE ASSY, MAIN, TAKE-UP	
270	*3-686-635-01	ARM, P	
271	X-3686-573-1	BRAKE ASSY, MAIN, SUPPLY	
272	*3-686-629-01	SLIDER,SELECTION,UPPER & LOWER	
273	3-686-508-01	GEAR, NO.2	
274	3-686-545-01	GEAR, NO.3	
275	3-686-544-01	GEAR, NO.4	
276	X-3686-514-1	GEAR ASSY, NO.1	
277	3-686-546-01	BELT, L- MOTOR	
278	8-835-196-01	MOTOR, DC BHF-2802A (CAPSTAN) M902	
279	A-7040-054-A	GUIDE (P) ASSY, ENTRANCE	
280	3-686-561-01	SCREW, DRUM GUARD	
281	3-686-724-01	NUT, GUIDE	
282	*3-686-894-01	FLANGE, #3 #4 GUIDE	
283	3-686-912-01	GUIDE, #3 #4	
284	3-699-609-01	SPRING, COMPRESSION	
285	*3-686-675-01	STOPPER, RING	
286	A-7040-007-A	RING ASSY, LOADING	262, 287
287	X-3686-576-1	ARM ASSY, PINCH ROLLER	
288	*3-686-911-01	PLATE, TOP, ROLLER	
289	3-697-518-01	GEAR, NO.10	

5-7. CHASSIS ASSEMBLY 2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BVTT
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BVTT2x6
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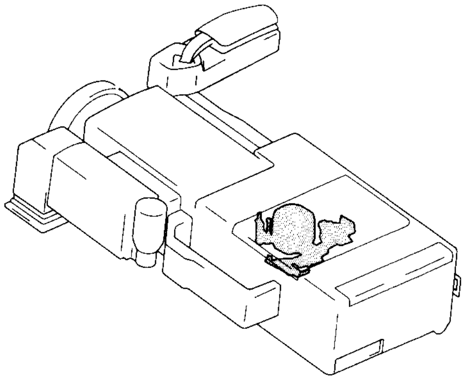
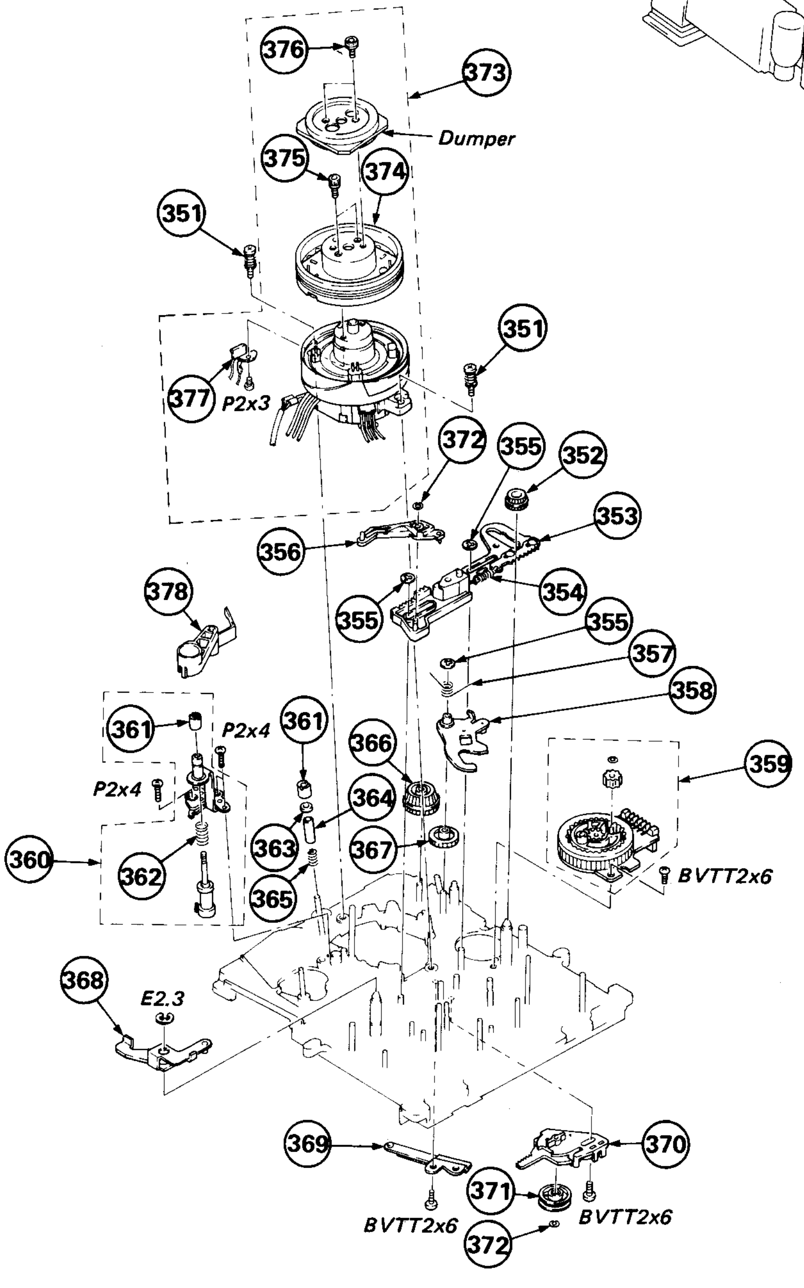
317
311
312
328
BVTT2x6
321
BVTT
2x6
BVTT2x6
329
322
313
327
323
324
325
330
BVTT2x6
326

No.	Part No.	Description	Remark
301	X-3686-531-1	BAND ASSY, TENSION REGULATOR	
302	3-699-519-01	SPRING, TENSION	
303	A-7040-059-A	ARM ASSY, TENSION REGULATOR	302, 304, 305, 309
304	*X-3686-523-1	PLATE ASSY, TENSION REGULATOR	
305	3-699-609-01	SPRING, COMPRESSION	
306	X-3686-763-1	GEAR (B) ASSY, DRIVING	
307	X-3686-572-2	TABLE ASSY, REEL, TAKE-UP	
308	X-3686-571-2	TABLE ASSY, REEL, SUPPLY	
309	3-697-546-01	SCREW (+-M2X6), SPECIAL	
310	X-3686-750-1	DRIVING COMPLETE ASSY	
311	*3-686-637-01	BRAKE (S), SOFT	
312	3-696-082-01	SPRING, TENSION	
313	*3-686-760-01	GUIDE, BAND	
314	*A-7070-024-A	LD-1 BOARD, COMPLETE	
315	3-686-568-01	SPRING, TORSION	
316	3-686-885-01	SPRING, TENSION	
317	*3-686-641-01	ARM, PINCH PRESS	
318	3-669-465-00	WASHER (1.5), STOPPER	
319	*3-686-660-01	ARM, PINCH LIMITER	
320	*3-686-567-01	SLEEVE, PINCH PRESS	
321	*X-3686-525-1	HOOK ASSY, SPRING	
322	*X-3686-529-1	BASE ASSY, CHANGE GEAR	
323	X-3686-520-1	GEAR ASSY, CHANGE	
324	*3-686-596-01	FLANGE, GEAR	
325	3-712-406-01	CLAMP, WIRE	
326	3-686-646-01	BELT, TIMIMG	
327	*3-686-991-01	STOPPER, REEL TABLE	
328	3-669-480-11	+ PTPWH 2	
329	3-701-436-11	WASHER, 1.6	
330	3-315-384-31	WASHER, STOPPER	
331	X-3686-590-1	BRAKE ASSY, REV	

5-8. CHASSIS ASSEMBLY 3

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P2x4
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P2x4
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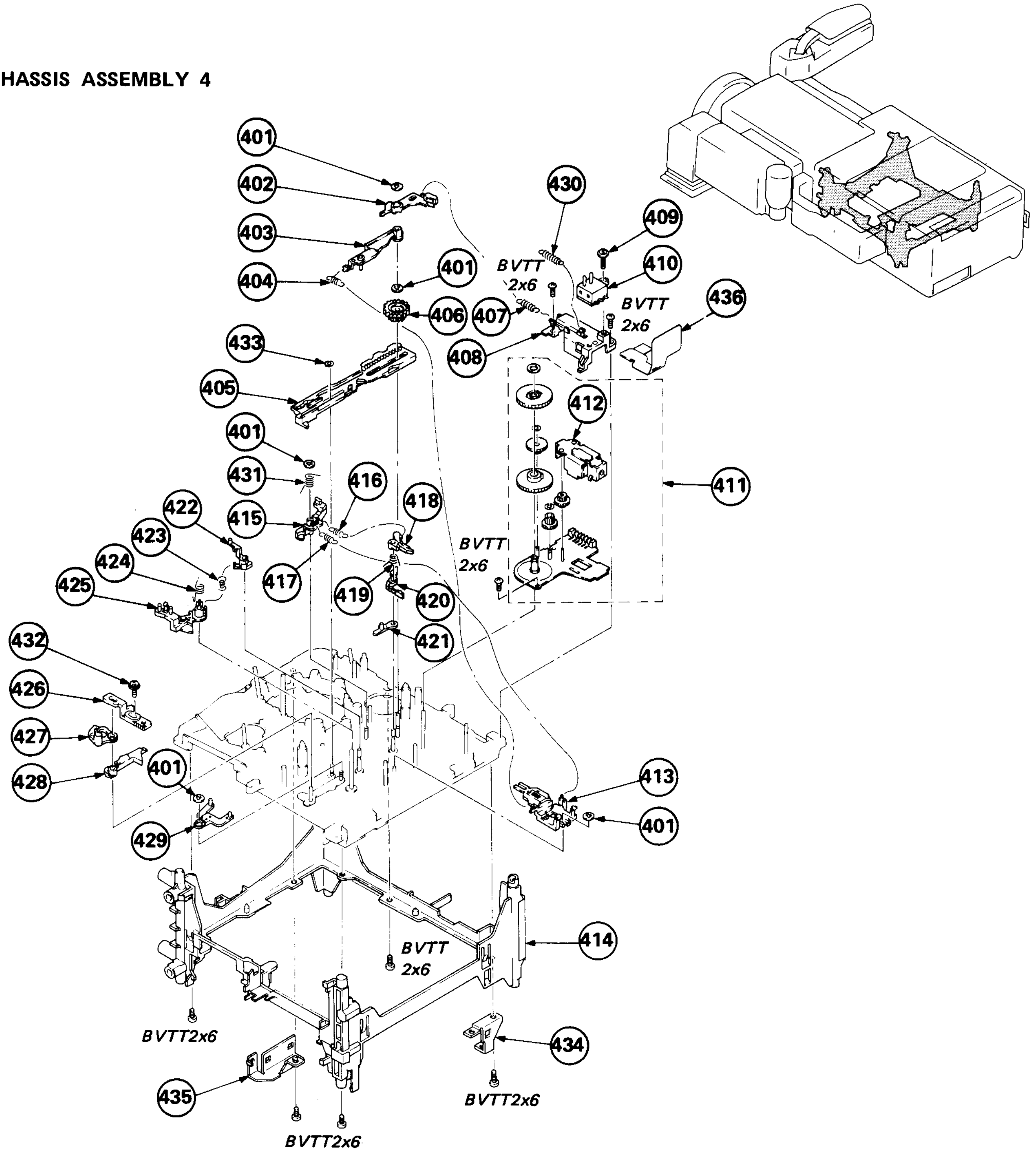
360
362
363
367
365
BVTT2x6
368
E2.3
369
370
371
BVTT2x6
BVTT2x6
372

No.	Part No.	Description	Remark
351	X-3686-569-1	SCREW ASSY, FITTING	
352	3-686-702-01	GEAR, DRIVING, GUIDE, SLANT	
353	*X-3686-548-2	SLIDER SUB ASSY, L	
354	3-686-886-01	SPRING, TENSION	
355	3-669-465-00	WASHER (1.5), STOPPER	
356	*X-3686-518-1	ARM ASSY	
357	3-686-540-01	SPRING, TORSION	
358	X-3686-579-1	CHANGE ASSY, DRIVE	
359	X-3712-403-1	L-SW ASSY	
360	A-7040-053-A	GUIDE BLOCK COMPLETE ASSY, #5	361, 362
361	3-686-724-01	NUT, GUIDE	
362	3-686-889-01	SPRING, COMPRESSION	
363	*3-686-894-01	FLANGE, #3 #4 GUIDE	
364	3-686-912-01	GUIDE, #3 #4	
365	3-699-609-01	SPRING, COMPRESSION	
366	3-686-539-01	GEAR, NO.9	
367	3-686-535-01	GEAR, NO.8	
368	*X-3686-509-1	LEVER ASSY, PINCH PRESS	
369	1-535-535-11	TERMINAL, SHAFT GROUND	
370	X-3686-521-1	BASE ASSY, IDLER	
371	X-3686-522-1	IDLER ASSY	
372	3-315-384-31	WASHER, STOPPER	
373	A-7048-042-A	DRUM ASSY (DVH-05D-R)	374-377
374	A-7049-004-A	DRUM ASSY, ROTARY UPPER (DVR-05-R)	
375	3-686-403-01	SCREW (2x5), BOLT WASHER	
376	3-686-422-01	WASHER (2x2.7), BOLT, HOLE	
377	1-806-975-11	SENSOR, DEW CONDENSATION	
378	*3-688-917-01	STOPPER, TAPE	
380	3-686-561-01	SCREW, DRUM GUARD	

5-9. CHASSIS ASSEMBLY 4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BVTT 2x6
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BVTT 2x6
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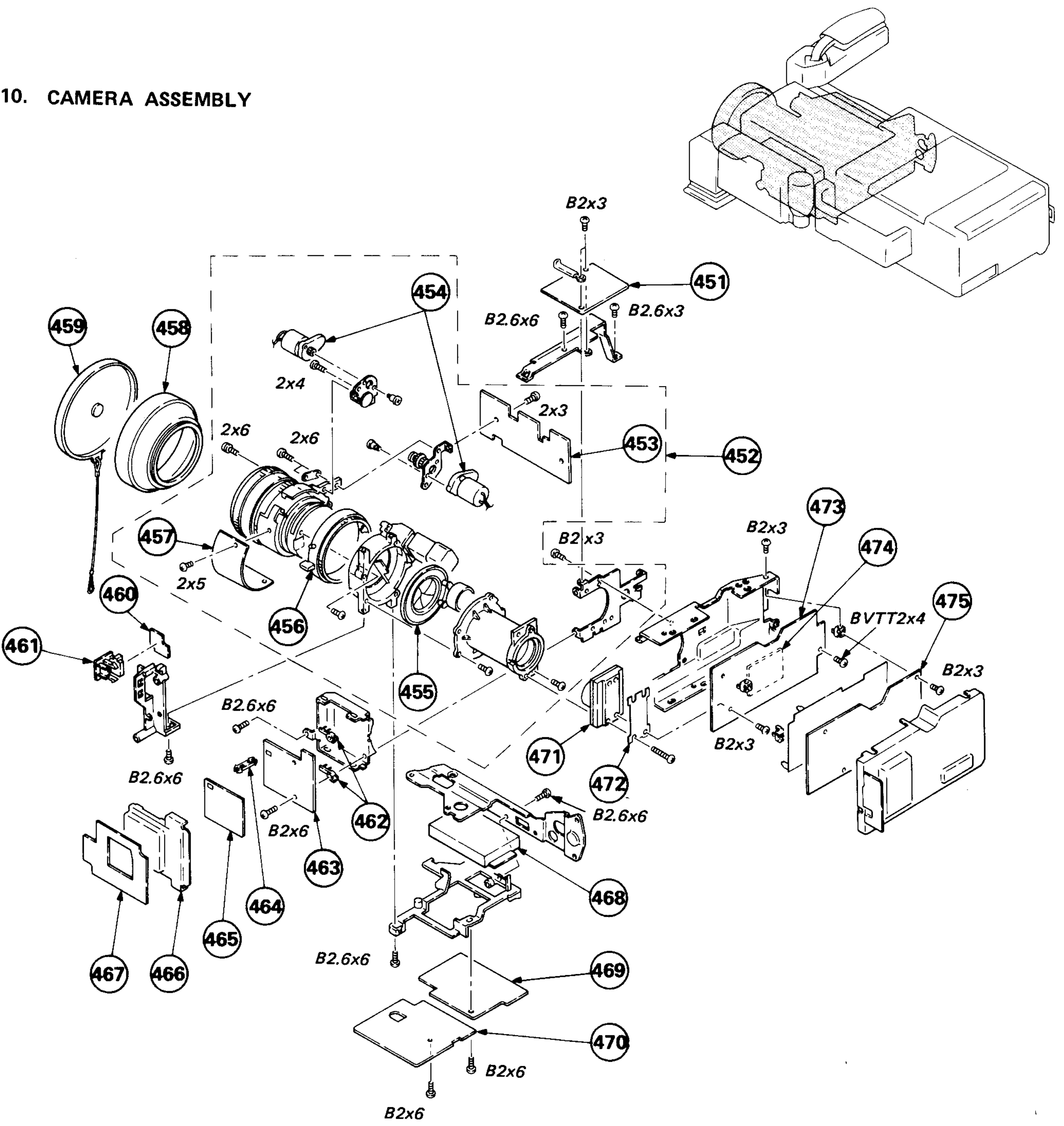
BVTT2x6

No.	Part No.	Description	Remark
401	3-669-465-00	WASHER (1.5), STOPPER	
402	X-3686-777-1	BRAKE ASSY, T.S	
403	*X-3686-528-1	ARM ASSY, B RELEASE	
404	3-686-903-01	SPRING, TENSION	
405	*3-686-657-08	SLIDER, M	
406	3-686-909-01	GEAR, MODE OUTPUT	
407	3-699-649-01	SPRING, TENSION	
408	*3-699-556-01	COVER, CONTROL MOTOR	
409	3-669-480-11	+ PTPWH 2	
410	1-554-942-11	SWITCH, PUSH (RECOG) S902	
411	A-7090-029-A	M-SW ASSY	412
412	8-835-110-01	MOTOR, DC (DNR-5301A) (CONTROL) M903	
413	*3-686-656-01	SLIDER, B RELEASE	
414	X-3686-848-1	FRAME ASSY, MOLD	434, 435
415	*3-686-634-01	ARM, RL	
416	3-686-906-01	SPRING, TENSION	
417	3-686-904-01	SPRING, TENSION	
418	X-3686-510-1	BRAKE ASSY, REW	
419	3-686-617-01	SPRING	
420	*3-686-638-01	ARM, RVS	
421	*3-686-580-01	ARM, SET UP	
422	3-686-996-01	BRAKE (S), HARD	
423	3-686-905-02	SPRING, TENSION	
424	3-686-603-04	SPRING	
425	*3-686-644-01	ARM, BAND	
426	*3-686-642-01	PLATE, ADJUSTMENT, BAND	
427	*3-686-755-01	DISK, EJECT	
428	*3-686-643-01	ARM, MODE	
429	*X-3686-530-1	ARM (A) ASSY, SELECTION	
430	3-699-650-01	SPRING, TENSION	
431	3-686-579-01	SPRING	
432	3-686-528-01	SCREW (2X6), +	
433	3-315-384-31	WASHER, STOPPER	
434	3-712-507-01	SHEET METAL, VI FITTING	
435	3-712-527-01	BRACKET, SS	
436	1-619-921-11	FP-19 BOARD	

5-10. CAMERA ASSEMBLY


B2x3
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B2.6x3
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BVTT2x4
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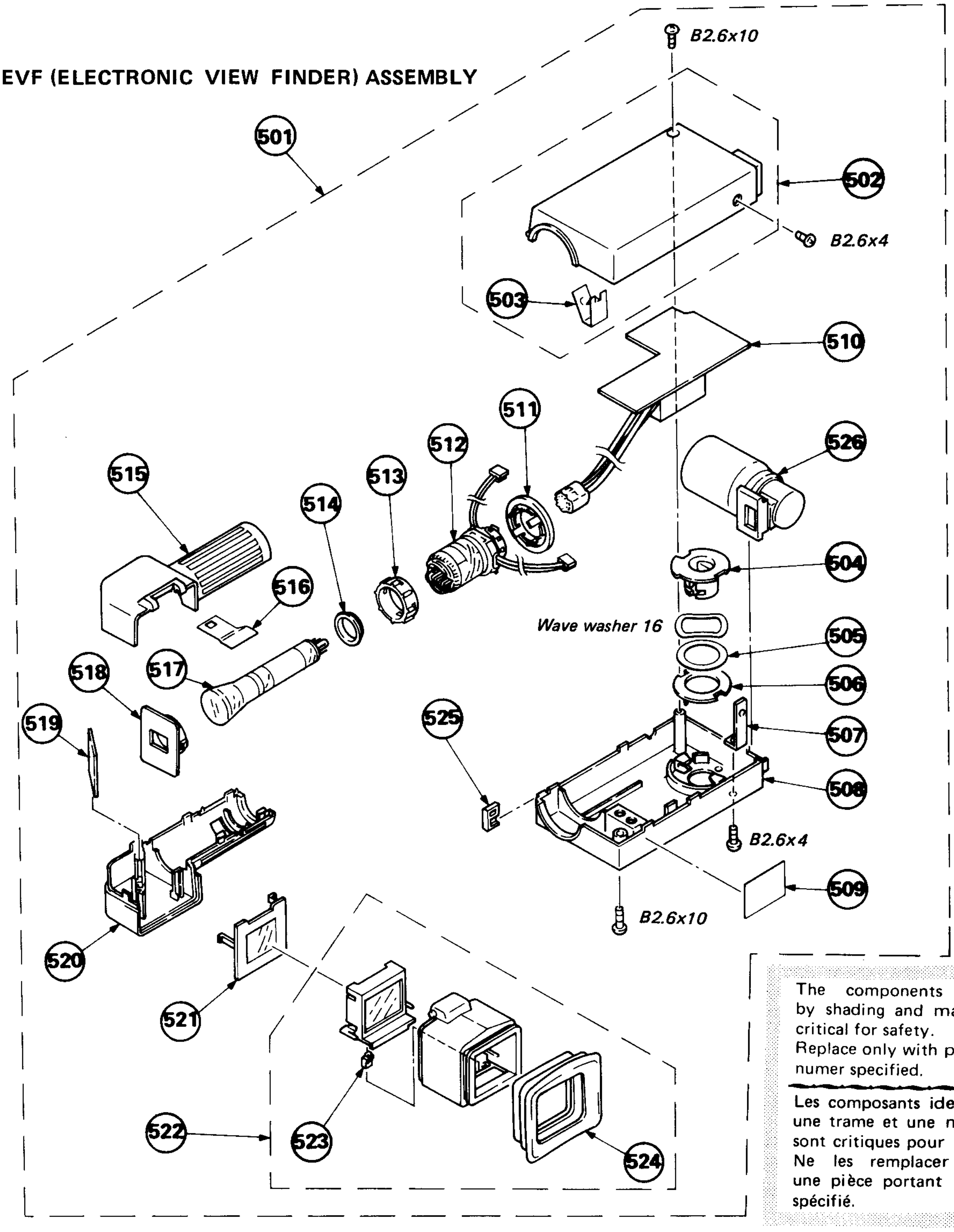
No.	Part No.	Description	Remark
451	*A-7060-573-A	AI-1 BOARD, COMPLETE	
452	1-547-213-11	LENS, ZOOM (VCL-1206YG)	453-457
453	*A-7060-604-A	AF-23 BOARD, COMPLETE	
454	8-835-127-01	MOTOR, DC (DNR-6300D)	
455		IRIS UNIT	
456		ZOOM RING UNIT	
457		PLATE, SCALE	
458	3-706-855-00	HOOD	
459	3-712-617-01	CAP, HOOD	
460	*1-620-145-11	AS-13 BOARD	
461	3-712-627-02	HOLDER, SENSOR	
462	*3-712-571-01	CALLOR, AW	
463	*A-7060-567-A	AW-3 BOARD, COMPLETE	
464	3-712-582-01	BRACKET, AW	
465	*A-7060-568-A	AT-5 BOARD, COMPLETE	
466	*X-3686-878-1	PLATE (A) ASSY, SHIELD	
467	*A-7060-432-A	EM-1 BOARD, COMPLETE	
468	1-464-704-11	CONVERTER UNIT, DC-DC (S)	
469	*A-7060-575-A	CG-1 BOARD, COMPLETE	
470	*A-7060-659-A	FC-10 BOARD, COMPLETE	
471	8-750-010-34	IU018-K-AA	
472	*3-690-235-01	SHEET, INSULATING, CCD	
473	*A-7060-565-A	CP-18 BOARD, COMPLETE	474
474	A-7068-047-A	DT-61 HIC BOARD, COMPLETE	
475	*A-7060-564-A	ME-4 BOARD, COMPLETE	

5-11. EVF (ELECTRONIC VIEW FINDER) ASSEMBLY


B2.6x10
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B2.6x4
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Wave washer 16
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B2.6x4
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B2.6x10
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The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remark
501	A-7019-041-A	EVF ASSY	502-526
502	X-3686-874-1	CASE ASSY, UPPER, EVF	503
503	X-3686-873-1	SPRING ASSY	
504	3-712-664-01	SHAFT, EVF ROTARY	
505	3-712-655-01	SLIDER, EVF	
506	X-3686-871-1	HOLDER ASSY, CLICK	
507	3-713-558-01	BRACKET	
508	3-712-672-01	CASE, EVF (LOWER)	
509	3-663-807-00	LABEL, CAUTION, EVF	
510	*A-7060-578-A	VF-7 BOARD, COMPLETE	
511	3-712-645-01	RING, CRT HOLDER	
512	⚠ 1-451-296-11	**DEELECTION YOKE (BLACK & WHITE) L901**	
513	*3-712-658-01	RETAINER, CRT	
514	*3-712-660-01	RING, RUBBER	
515	3-712-670-01	HOLDER (UPPER), CRT	
516	3-712-657-01	SPRING, LEAF	
517	⚠1-546-061-11	**CATHODE-RAY TUBE, B/W (M01JPG5W) V901**	
518	*3-712-659-01	COVER, CRT	
519	3-712-656-01	MIRROR, REFLECTION	
520	X-3686-872-1	HOLDER (LOWER) ASSY, CRT	
521	X-3686-859-1	HOLDER (2) ASSY, LENS	
522	A-7090-503-A	HOLDER ASSY, LENS	523, 524
523	3-712-566-01	KNOB, ADJUSTMENT	
524	3-686-861-01	CAP, EYE	
525	3-712-667-01	PLATE, ORNAMENTAL	
526	8-814-225-90	MICROPHONE C-2012	

5-12. HARDWARE LIST

SCREW

7-621-255-10	SCREW +P 2x3
7-621-255-20	SCREW +P 2x4
7-621-255-45	SCREW +P 2x6
7-621-255-50	SCREW +P 2x8
7-621-255-65	SCREW +P 2x10
7-621-256-05	SCREW +P 2x16
7-621-259-25	SCREW +P 2.6x4
7-621-555-10	SCREW +K 2x3
7-621-772-08	SCREW +B 2x3
7-621-772-18	SCREW +B 2x4
7-621-772-38	SCREW +B 2x6
7-621-772-50	SCREW +B 2x10
7-621-772-68	SCREW +B 2x12
7-621-775-08	SCREW +B 2.6x3
7-621-775-10	SCREW +B 2.6x4
7-621-775-40	SCREW +B 2.6x8
7-628-254-05	SCREW +PS2.6x5
7-682-561-09	SCREW +B 4x8
7-685-103-14	SCREW +P 2x5 TYPE2 NON-SLIT
7-685-104-14	SCREW +P 2x6 TYPE2 NON-SLIT

WASHER

7-623-710-67	WASHER 12, WABE TYPE
7-623-710-87	WASHER 16, WABE TYPE

RING

7-624-101-01	STOP RING 1.2, TYPE-E
7-624-102-04	STOP RING 1.5, TYPE-E
7-624-105-04	STOP RING 2.3, TYPE-E
7-624-106-04	STOP RING 3.0, TYPE-E

PRECISION-SCREW

7-627-552-27	SCREW, PRECISION +P 1.7x2
7-627-553-48	SCREW, PRECISION +P 2x4
7-627-850-18	SCREW, PRECISION +P 1.4x2.5

TAPPING-SCREW

7-685-233-19	SCREW +KTP 2.6x10 TYPE2 NON-SLIT
7-685-133-14	SCREW +BTP 2.6x6 TYPE2 NON-SLIT
7-685-134-19	SCREW +BTP 2.6x8 TYPE2 NON-SLIT
7-685-535-14	SCREW +BTP 2.6x10 TYPE2 NON-SLIT
7-685-535-19	SCREW +BTP 2.6x10 TYPE2 NON-SLIT
7-685-780-04	SCREW +PTT 2x3 (S)
7-685-781-04	SCREW +BVTT 2x4 (S)
7-685-853-01	SCREW +BVTT 2x6 (S)

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Itmes with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

When indicating parts by reference number, please include the board name.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No	Part No.	Description		Remark
	*A-7060-571-A	AU-24 BOARD, COMPLETE **********************		
		CAPACITOR		
C401	1-124-225-00	ELECT 100MF	20%	6.3V
C402	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C403	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V
C404	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C405	1-163-014-00	CERAMIC CHIP 0.0027MF	10%	50V
C406	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C407	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V
C408	1-124-253-00	ELECT 0.47MF	20%	50V
C409	1-124-224-00	ELECT 47MF	20%	6.3V
C410	1-124-224-00	ELECT 47MF	20%	6.3V
C411	1-124-253-00	ELECT 0.47MF	20%	50V
C412	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C413	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C414	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C415	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C416	1-124-253-00	ELECT 0.47MF	20%	50V
C417	1-163-145-00	CERAMIC CHIP 0.0015MF	5%	50V
C418	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C419	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C420	1-163-014-00	CERAMIC CHIP 0.0027MF	10%	50V
C421	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C422	1-123-647-00	ELECT 47MF	20%	6.3V
C423	1-123-646-00	ELECT 33MF	20%	6.3V
C424	1-124-225-00	ELECT 100MF	20%	6.3V
C425	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C426	1-124-255-00	ELECT 1MF	20%	50V
C427	1-123-607-00	ELECT 0.1MF	20%	50V
C428	1-124-257-00	ELECT 2.2MF	20%	35V
C429	1-124-257-00	ELECT 2.2MF	20%	35V
C430	1-124-257-00	ELECT 2.2MF	20%	35V
C431	1-124-233-00	ELECT 10MF	20%	6.3V
C432	1-163-020-00	CERAMIC CHIP 0.0082MF	10%	50V
C433	1-124-255-00	ELECT 1MF	20%	50V
C434	1-163-137-00	CERAMIC CHIP 680PF	5%	50V
C435	1-163-079-00	CERAMIC CHIP 0.039MF	10%	25V
C436	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C437	1-163-088-00	CERAMIC CHIP 5PF	0.25PF	50V
C438	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C439	1-123-661-00	ELECT 100MF	20%	6.3V
C440	1-124-239-00	ELECT 6.8MF	20%	10V
C441	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C442	1-124-239-00	ELECT 6.8MF	20%	10V
C443	1-124-225-00	ELECT 100MF	20%	6.3V
C444	1-124-245-00	ELECT 4.7MF	20%	16V
C445	1-124-245-00	ELECT 4.7MF	20%	16V
C446	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C447	1-126-100-11	ELECT 10MF	20%	6.3V
C450	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C451	1-124-224-00	ELECT 47MF	20%	6.3V
C452	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V
C453	1-123-647-00	ELECT 47MF	20%	6.3V
C454	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
		CONNECTOR		
CN403	*1-564-012-00	PIN, CONNECTOR 2P		
CN404	*1-564-013-00	PIN, CONNECTOR 3P		
CN405	*1-564-012-00	PIN, CONNECTOR 2P		
CN406	*1-564-012-00	PIN, CONNECTOR 2P		
W204	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P		
W205	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P		
		FILTER		
FL401	1-235-398-11	BPF (1.5MHz)		
		IC		
IC401	8-752-003-79	IC CX20037A		
		COIL		
L401	1-407-165-XX	MICRO INDUCTOR 47UH		
L402	1-408-948-00	MICRO INDUCTOR 220UH		
		TRANSISTOR		
Q401	8-729-100-67	TRANSISTOR 2SC1623-L7		
Q402	8-729-901-03	TRANSISTOR DTC144WK		
Q403	8-729-116-04	TRANSISTOR 2SK160		
Q404	8-729-901-06	TRANSISTOR DTA144WK		
Q405	8-729-116-04	TRANSISTOR 2SK160		
Q406	8-729-100-67	TRANSISTOR 2SC1623-L7		
Q407	8-729-100-76	TRANSISTOR 2SA812		
Q408	8-729-100-67	TRANSISTOR 2SC1623-L7		
Q409	8-729-100-67	TRANSISTOR 2SC1623-L7		
Q410	8-729-100-67	TRANSISTOR 2SC1623-L7		
Q411	8-729-100-67	TRANSISTOR 2SC1623-L7		
Q412	8-729-901-03	TRANSISTOR DTC144WK		
Q413	8-729-100-76	TRANSISTOR 2SA812		
Q414	8-729-901-06	TRANSISTOR DTA144WK		
		RESISTOR		
R401	1-216-049-00	METAL CHIP 1K	5%	1/10W
R402	1-216-049-00	METAL CHIP 1K	5%	1/10W
R403	1-216-057-00	METAL CHIP 2.2K	5%	1/10W
R404	1-216-057-00	METAL CHIP 2.2K	5%	1/10W
R405	1-216-060-00	METAL CHIP 3K	5%	1/10W
R406	1-216-061-00	METAL CHIP 3.3K	5%	1/10W
R407	1-216-077-00	METAL CHIP 15K	5%	1/10W
R408	1-216-083-00	METAL CHIP 27K	5%	1/10W
R409	1-216-121-00	METAL CHIP 1M	5%	1/10W
R410	1-216-089-00	METAL CHIP 47K	5%	1/10W
R412	1-216-079-00	METAL CHIP 18K	5%	1/10W
R413	1-216-079-00	METAL CHIP 18K	5%	1/10W
R414	1-216-079-00	METAL CHIP 18K	5%	1/10W

Ref.No	Part No.	Description				Remark
R415	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R416	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R417	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R418	1-216-047-00	METAL CHIP	820	5%	1/10W	
R419	1-247-829-00	CARBON	820	5%	1/6W	
R420	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R421	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R422	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R423	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R424	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R425	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R426	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R427	1-216-045-00	METAL CHIP	680	5%	1/10W	
R428	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R429	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R430	1-216-009-00	METAL CHIP	22	5%	1/10W	
R431	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R432	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R433	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R434	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R435	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R436	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R437	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R438	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R439	1-216-025-00	METAL CHIP	100	5%	1/10W	
R440	1-216-043-00	METAL CHIP	560	5%	1/10W	
R441	1-216-041-00	METAL CHIP	470	5%	1/10W	
R442	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R443	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R444	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R445	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R446	1-216-045-00	METAL CHIP	680	5%	1/10W	
R447	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R448	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R449	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R450	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R451	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R452	1-216-035-00	METAL CHIP	270	5%	1/10W	
R453	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R454	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R455	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R456	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R457	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R458	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R460	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R461	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R462	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R463	1-216-013-00	METAL CHIP	33	5%	1/10W	
R464	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV401	1-230-523-11	RES, ADJ, METAL GLAZE 10K	
RV402	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV403	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K	

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***A-7060-570-A VI-21 BOARD, COMPLETE**
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*A-7068-044-A VY-8 BOARD, COMPLETE
*A-7068-045-A VD-5 BOARD, COMPLETE
*A-7068-046-A VC-10 BOARD, COMPLETE

2-279-715-01 RIVET, NYLON

CAPACITOR

Ref.No	Part No.	Description					Remark
C201	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V		
C203	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V		
C204	1-163-108-00	CERAMIC CHIP	43PF	5%	50V		
C205	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V		
C206	1-124-566-11	ELECT	120MF	20%	6.3V		
C207	1-124-442-00	ELECT	330MF	20%	6.3V		
C208	1-124-224-00	ELECT	47MF	20%	6.3V		
C209	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V		
C210	1-124-566-11	ELECT	120MF	20%	6.3V		
C211	1-124-565-00	ELECT	56MF	20%	6.3V		
C212	1-124-245-00	ELECT	4.7MF	20%	16V		
C213	1-163-139-00	CERAMIC CHIP	820PF	5%	50V		
C214	1-124-224-00	ELECT	47MF	20%	6.3V		
C215	1-163-035-00	CERAMIC CHIP	0.047MF		50V		
C216	1-163-145-00	CERAMIC CHIP	0.0015MF	5%	50V		
C217	1-163-101-00	CERAMIC CHIP	22PF	5%	50V		
C218	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V		
C219	1-163-111-00	CERAMIC CHIP	56PF	5%	50V		
C220	1-163-133-00	CERAMIC CHIP	470PF	5%	50V		
C221	1-124-233-00	ELECT	10MF	20%	16V		
C222	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V		
C223	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V		
C224	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V		
C225	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V		
C226	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V		
C227	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V		
C228	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V		
C229	1-163-127-00	CERAMIC CHIP	270PF	5%	50V		
C230	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V		
C231	1-163-105-00	CERAMIC CHIP	33PF	5%	50V		
C232	1-163-213-00	CERAMIC CHIP	0.0022MF	5%	50V		
C233	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V		
C235	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V		
C236	1-163-093-00	CERAMIC CHIP	10PF	5%	50V		
C237	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V		
C238	1-163-129-00	CERAMIC CHIP	330PF	5%	50V		
C239	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V		
C240	1-124-224-00	ELECT	47MF	20%	6.3V		
C241	1-163-097-00	CERAMIC CHIP	15PF	5%	50V		
C243	1-124-587-11	ELECT	220MF	20%	6.3V		
C244	1-124-222-00	ELECT	22MF	20%	6.3V		

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C245	1-124-222-00	ELECT 22MF	20%	6.3V
C246	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C247	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C248	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C249	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C250	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C251	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C252	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C253	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C255	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C256	1-124-225-00	ELECT 100MF	20%	6.3V
C257	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C258	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C259	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C260	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C261	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C262	1-163-038-00	CERAMIC CHIP 0.1MF		25V

CONNECTOR

CN201	*1-564-012-00	PIN, CONNECTOR 2P
CN206	*1-564-014-00	PIN, CONNECTOR 4P
CN207	*1-564-013-00	PIN, CONNECTOR 3P
CN208	*1-564-014-00	PIN, CONNECTOR 4P
CN209	*1-564-013-00	PIN, CONNECTOR 3P
W202	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P
W204	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P
W205	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P

DIODE

D201	8-719-815-87	DIODE 1S1587
D202	8-719-815-87	DIODE 1S1587

DELAY LINE

DL201	1-415-375-11	DELAY LINE, DUAL-1H

CONVERTER

DR201	1-464-689-11	CONVERTER, DC-DC

FILTER

FL201	1-409-386-11	C E TRAP

IC

IC201	8-757-991-00	IC CX-7991

COIL

Ref.No	Part No.	Description	Remark
L201	1-408-969-21	MICRO INDUCTOR 8.2UH	
L202	1-407-169-XX	MICRO INDUCTOR 100UH	
L203	1-407-169-XX	MICRO INDUCTOR 100UH	
L204	1-407-189-XX	MICRO INDUCTOR 15UH	
L205	1-408-960-21	MICRO INDUCTOR 1.5UH	
L206	1-408-960-21	MICRO INDUCTOR 1.5UH	
L207	1-407-169-XX	MICRO INDUCTOR 100UH	
L208	1-407-169-XX	MICRO INDUCTOR 100UH	
L209	1-407-169-XX	MICRO INDUCTOR 100UH	
L210	1-407-169-XX	MICRO INDUCTOR 100UH	
L211	1-407-172-XX	MICRO INDUCTOR 180UH	
L212	1-408-987-21	MICRO INDUCTOR 330UH	
L213	1-407-177-XX	MICRO INDUCTOR 470UH	
L214	1-408-975-41	MICRO INDUCTOR 27UH	
L215	1-410-627-11	COIL, CHOKE 100UH	
L216	1-408-966-21	MICRO INDUCTOR 4.7UH	
L217	1-408-970-21	MICRO INDUCTOR 10UH	

VARIABLE COIL

LV201	1-459-547-11	COIL, VARIABLE 15UH

TRANSISTOR

Q201	8-729-901-03	TRANSISTOR DTC144WK
Q202	8-729-901-03	TRANSISTOR DTC144WK
Q205	8-729-100-66	TRANSISTOR 2SC1623
Q208	8-729-900-99	TRANSISTOR DTA144WK
Q209	8-729-100-66	TRANSISTOR 2SC1623
Q210	8-729-312-22	TRANSISTOR 2SA1122
Q211	8-729-100-66	TRANSISTOR 2SC1623
Q212	8-729-100-66	TRANSISTOR 2SC1623
Q213	8-729-900-99	TRANSISTOR DTA144WK
Q214	8-729-901-03	TRANSISTOR DTC144WK
Q216	8-729-901-03	TRANSISTOR DTC144WK
Q217	8-729-901-03	TRANSISTOR DTC144WK
Q218	8-729-900-99	TRANSISTOR DTA144WK
Q219	8-729-901-03	TRANSISTOR DTC144WK
Q220	8-729-312-22	TRANSISTOR 2SA1122
Q221	8-729-100-66	TRANSISTOR 2SC1623
Q222	8-729-900-99	TRANSISTOR DTA144WK
Q223	8-729-100-66	TRANSISTOR 2SC1623
Q224	8-729-100-66	TRANSISTOR 2SC1623
Q225	8-729-100-66	TRANSISTOR 2SC1623
Q226	8-729-100-66	TRANSISTOR 2SC1623
Q227	8-729-100-66	TRANSISTOR 2SC1623
Q228	8-729-100-66	TRANSISTOR 2SC1623
Q229	8-729-900-99	TRANSISTOR DTA144WK
Q230	8-729-100-66	TRANSISTOR 2SC1623
Q232	8-729-901-03	TRANSISTOR DTC144WK
Q233	8-729-100-66	TRANSISTOR 2SC1623
Q234	8-729-901-03	TRANSISTOR DTC144WK
Q235	8-729-901-03	TRANSISTOR DTC144WK
Q236	8-729-901-03	TRANSISTOR DTC144WK
Q237	8-729-901-03	TRANSISTOR DTC144WK
Q238	8-729-901-03	TRANSISTOR DTC144WK
Q241	8-729-100-76	TRANSISTOR 2SA812
Q242	8-729-100-76	TRANSISTOR 2SA812

When indicating parts by reference number, please include the board name.

VI-21

RESISTOR

Ref.No	Part No.	Description				Remark
R103	1-216-021-00	METAL CHIP	68	5%	1/10W	
R104	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R105	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R201	1-216-015-00	METAL CHIP	39	5%	1/10W	
R202	1-216-015-00	METAL CHIP	39	5%	1/10W	
R203	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R204	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R206	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R207	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R211	1-216-039-00	METAL CHIP	390	5%	1/10W	
R212	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R213	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R214	1-216-041-00	METAL CHIP	470	5%	1/10W	
R215	1-216-041-00	METAL CHIP	470	5%	1/10W	
R216	1-216-025-00	METAL CHIP	100	5%	1/10W	
R217	1-216-041-00	METAL CHIP	470	5%	1/10W	
R218	1-216-041-00	METAL CHIP	470	5%	1/10W	
R219	1-216-019-00	METAL CHIP	56	5%	1/10W	
R220	1-216-041-00	METAL CHIP	470	5%	1/10W	
R221	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R222	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R223	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R224	1-216-021-00	METAL CHIP	68	5%	1/10W	
R225	1-216-043-00	METAL CHIP	560	5%	1/10W	
R226	1-216-035-00	METAL CHIP	270	5%	1/10W	
R227	1-216-035-00	METAL CHIP	270	5%	1/10W	
R228	1-216-029-00	METAL CHIP	150	5%	1/10W	
R229	1-216-019-00	METAL CHIP	56	5%	1/10W	
R230	1-216-025-00	METAL CHIP	100	5%	1/10W	
R231	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R232	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R233	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R234	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R235	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R236	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R237	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R238	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R239	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R240	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R241	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R242	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R243	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R244	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R245	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R246	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R247	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R248	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R249	1-216-045-00	METAL CHIP	680	5%	1/10W	
R250	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R251	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R252	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R253	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R254	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R255	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R256	1-216-041-00	METAL CHIP	470	5%	1/10W	
R257	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R258	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R259	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R260	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R261	1-216-295-00	METAL CHIP	0	5%	1/10W	
R262	1-216-043-00	METAL CHIP	560	5%	1/10W	
R263	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R264	1-216-037-00	METAL CHIP	330	5%	1/10W	
R265	1-216-043-00	METAL CHIP	560	5%	1/10W	
R266	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R267	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R268	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R269	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R270	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R271	1-216-033-00	METAL CHIP	220	5%	1/10W	
R272	1-216-021-00	METAL CHIP	68	5%	1/10W	
R273	1-216-043-00	METAL CHIP	560	5%	1/10W	
R274	1-216-045-00	METAL CHIP	680	5%	1/10W	
R275	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R276	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R279	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R280	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R281	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R282	1-216-295-00	METAL CHIP	0	5%	1/10W	
R285	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R287	1-216-295-00	METAL CHIP	0	5%	1/10W	
R288	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R289	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R293	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R294	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R295	1-216-039-00	METAL CHIP	390	5%	1/10W	
R296	1-216-025-00	METAL CHIP	100	5%	1/10W	
R297	1-216-039-00	METAL CHIP	390	5%	1/10W	
R298	1-216-015-00	METAL CHIP	39	5%	1/10W	
R299	1-216-109-00	METAL CHIP	330K	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV201	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K	
RV202	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV203	1-230-523-11	RES, ADJ, METAL GLAZE 10K	

CRYSTAL

Ref.No	Part No.	Description	Remark
X201	1-567-303-11	VIBRATOR, CERAMIC (10.7MHz)	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
	*A-7060-382-A	RP-39 BOARD, COMPLETE ***********************	
	*A-7068-043-A	RP-34 BOARD, COMPLETE	
		CAPACITOR	
C481	1-163-111-00	CERAMIC CHIP 56PF 5% 50V	
C482	1-163-119-00	CERAMIC CHIP 120PF 5% 50V	
C483	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C484	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C485	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C486	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C487	1-124-222-00	ELECT 22MF 20% 6.3V	
		CONNECTOR	
CN481	*1-564-013-00	PIN, CONNECTOR 3P	
CN482	*1-564-016-00	PIN, CONNECTOR 6P	
CN483	*1-564-003-00	PIN, CONNECTOR 4P	
W202	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P	
		COIL	
L481	1-408-970-21	MICRO INDUCTOR 10UH	
L482	1-408-948-00	MICRO INDUCTOR 220UH	
		TRANSISTOR	
Q481	8-729-117-54	TRANSISTOR 2SA1175	
Q482	8-729-100-76	TRANSISTOR 2SA812	
Q483	8-729-901-01	TRANSISTOR DTC144EK	
Q484	8-729-900-99	TRANSISTOR DTA144WK	
Q485	8-729-901-01	TRANSISTOR DTC144EK	
		RESISTOR	
R481	1-216-006-11	METAL CHIP 16 5% 1/10W	
R482	1-216-047-00	METAL CHIP 820 5% 1/10W	
R483	1-216-047-00	METAL CHIP 820 5% 1/10W	
R484	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R485	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R486	1-216-045-00	METAL CHIP 680 5% 1/10W	

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Ref.No	Part No.	Description	Remark
	*A-7060-432-A	EM-1 BOARD, COMPLETE *********************	
		CAPACITOR	
C401	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C402	1-163-074-00	CERAMIC CHIP 0.033MF 10% 25V	
C403	1-163-074-00	CERAMIC CHIP 0.033MF 10% 25V	
C405	1-123-661-00	ELECT 100MF 20% 6.3V	
C406	1-123-647-00	ELECT 47MF 20% 6.3V	
C407	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C408	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C409	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C410	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C411	1-163-137-00	CERAMIC CHIP 680PF 5% 50V	
C412	1-163-101-00	CERAMIC CHIP 22PF 5% 50V	
C901	1-124-287-00	ELECT 10MF 20% 10V	
C902	1-124-287-00	ELECT 10MF 20% 10V	
C903	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C904	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C905	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
		CONNECTOR	
CN401	*1-564-003-00	PIN, CONNECTOR 4P	
CN402	*1-564-002-00	PIN, CONNECTOR 3P	
CN901	*1-564-001-11	PIN, CONNECTOR 2P	
CN902	*1-564-001-11	PIN, CONNECTOR 2P	
CN903	*1-564-001-11	PIN, CONNECTOR 2P	
CN904	*1-564-004-00	PIN, CONNECTOR 5P	
CN905	*1-564-002-00	PIN, CONNECTOR 3P	
CN906	*1-564-001-11	PIN, CONNECTOR 2P	
		DIODE	
D401	8-719-106-53	DIODE RD-10M-B2	
D403	8-719-801-48	DIODE 1SS193	
		JACK	
J401	1-563-454-11	JACK, MINIATURE (DC OUT)	
J402	1-507-921-00	JACK (EXT MIC)	
		COIL	
L901	1-408-958-21	MICRO INDUCTOR 1UH	
L902	1-408-958-21	MICRO INDUCTOR 1UH	
		TRANSISTOR	
Q401	8-729-100-66	TRANSISTOR 2SC1623	
Q402	8-729-100-66	TRANSISTOR 2SC1623	
Q901	8-729-901-01	TRANSISTOR DTC144EK	
Q902	8-729-100-66	TRANSISTOR 2SC1623	
Q903	8-729-100-66	TRANSISTOR 2SC1623	
Q905	8-729-901-01	TRANSISTOR DTC144EK	
Q906	8-729-901-01	TRANSISTOR DTC144EK	
		RESISTOR	
R401	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R402	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R403	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R404	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R405	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R406	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R407	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R408	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R409	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R410	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R901	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R902	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R903	1-216-087-00	METAL CHIP 39K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R904	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R906	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R907	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R908	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R909	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R910	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R911	1-216-018-00	METAL CHIP 51 5% 1/10W	

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*A-7060-433-A SK-12 BOARD, COMPLETE
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*3-712-579-01 HOLDER, LCD

CAPACITOR

C301	1-135-096-21	TANTAL. CHIP 4.7MF 20% 10V	
C302	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C303	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C304	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C305	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C306	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	
C307	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	

DIODE

D301	8-719-100-03	DIODE 1S2835	
D302	8-719-801-45	DIODE 1SS187	
D303	8-719-918-67	DIODE GL-1EG102	

IC

IC301	8-759-111-52	IC UPD7502G-376-12	
IC302	8-759-106-26	IC UPD4069UBG	

INDICATOR TUNE, FLUORESCENT

ND301	1-807-613-11	DISPLAY PANEL, LIQUID CRYSTAL	

TRANSISTOR

Q301	8-729-901-01	TRANSISTOR DTC144EK	
Q302	8-729-901-01	TRANSISTOR DTC144EK	
Q303	8-729-901-01	TRANSISTOR DTC144EK	

RESISTOR

Ref.No	Part No.	Description	Remark
R301	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R302	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R303	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R304	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R305	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R306	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R307	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R308	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R309	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R310	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R311	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R312	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R313	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R314	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R315	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R316	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R318	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R319	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R320	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R321	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R322	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R323	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R324	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R325	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R326	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R327	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R328	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R329	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R330	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R331	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R332	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R334	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R335	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R336	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R337	1-216-037-00	METAL CHIP 330 5% 1/10W	
R338	1-216-073-00	METAL CHIP 10K 5% 1/10W	

SWITCH

S301	1-554-371-31	SWITCH, TACT (▮▮)	
S302	1-554-371-31	SWITCH, TACT (◀◀)	
S303	1-554-371-31	SWITCH, TACT (▶▶)	
S304	1-554-371-31	SWITCH, TACT (■)	
S305	1-554-371-31	SWITCH, TACT (RESET)	
S306	1-554-371-31	SWITCH, TACT (MEMORY)	
S307	1-554-371-31	SWITCH, TACT (INSERT)	
S308	1-554-371-31	SWITCH, TACT (▶)	
S309	1-553-977-00	SWITCH, SLIDE (COUNTER)	
S310	1-553-977-00	SWITCH, SLIDE (EDIT)	
S311	1-554-371-31	SWITCH, TACT (VTR POWER)	
S312	1-554-371-31	SWITCH, TACT (▮▶)	
S313	1-554-364-00	SWITCH, SLIDE (⏏)	
S314	1-554-364-00	SWITCH, SLIDE (REC)	

CRYSTAL

X301	1-527-532-00	OSCILLATOR, CERAMIC	

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1-620-152-11 SC-6 BOARD
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*1-533-146-00 HOLDER, FUSE

CAPACITOR

C381	1-123-321-00	ELECT 220MF 20% 16V	
C382	1-123-323-00	ELECT 470MF 20% 16V	

When indicating parts by reference number, please include the board name.

CONNECTOR

Ref.No	Part No.	Description	Remark
CN381	*1-560-891-00	PIN, CONNECTOR 3P	
CN382	*1-564-029-00	PIN, CONNECTOR 4P	
CN384	*1-564-018-11	PIN, CONNECTOR 8P	
CN385	1-562-582-14	SOCKET, CONNECTOR 22P	
CN386	*1-564-187-00	PIN, CONNECTOR	

COMPOSITION CIRCUIT BLOCK

Ref.No	Part No.	Description	Remark
CP381	1-232-838-11	COMPOSITION CIRCUIT BLOCK	

FUSE

Ref.No	Part No.	Description	Remark
F381	**⚠1-532-745-11**	**FUSE, GLASS TUBE (125V 3.15A)**	
F901	⚠1-532-777-21	FUSE, MICRO (SECONDARY)(1.25A)	
F902	⚠1-532-777-21	FUSE, MICRO (SECONDARY)(1.25A)	
F903	⚠1-532-777-21	FUSE, MICRO (SECONDARY)(1.25A)	

COIL

Ref.No	Part No.	Description	Remark
L381	1-410-337-11	MICRO INDUCTOR 1UH	
L382	1-410-337-11	MICRO INDUCTOR 1UH	
L383	1-410-337-11	MICRO INDUCTOR 1UH	
L384	1-410-337-11	MICRO INDUCTOR 1UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q381	8-729-901-01	TRANSISTOR DTC144EK	

RESISTOR

Ref.No	Part No.	Description				Remark
R381	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R382	1-216-295-00	METAL CHIP	0	5%	1/10W	

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*A-7060-435-A CC-6 BOARD, COMPLETE

CAPACITOR

Ref.No	Part No.	Description				Remark
C901	1-163-021-00	CERAMIC CHIP	0.01MF		50V	
C902	1-124-287-00	ELECT	10MF	20%	10V	
C903	1-124-287-00	ELECT	10MF	20%	10V	
C904	1-124-224-00	ELECT	47MF	20%	6.3V	
C906	1-123-298-00	ELECT	470MF	20%	6.3V	
C907	1-163-005-00	CERAMIC CHIP	470PF	10%	50V	

JACK

Ref.No	Part No.	Description	Remark
J901	1-563-469-11	JACK, PIN (MINIATURE) 2P (ACCESSORY)	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q901	8-729-901-03	TRANSISTOR DTC144WK	
Q902	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q903	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q904	8-729-901-03	TRANSISTOR DTC144WK	
Q905	8-729-901-03	TRANSISTOR DTC144WK	
Q906	8-729-100-67	TRANSISTOR 2SC1623-L7	

RESISTOR

Ref.No	Part No.	Description				Remark
R901	1-216-015-00	METAL CHIP	39	5%	1/10W	
R902	1-216-015-00	METAL CHIP	39	5%	1/10W	
R903	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R904	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R905	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R906	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R907	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R908	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R909	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R910	1-216-017-00	METAL CHIP	47	5%	1/10W	
R911	1-216-041-00	METAL CHIP	470	5%	1/10W	
R912	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R913	1-216-049-00	METAL CHIP	1K	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV901	1-237-411-11	RES, VAR, CARBON 1K(SHARPNESS)	

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A-7060-343-A RS-18 BOARD, COMPLETE

Ref.No	Part No.	Description	Remark
	3-712-106-01	REINFORCEMENT (333)	
	3-712-410-01	HOLDER, RS	

CAPACITOR

Ref.No	Part No.	Description				Remark
C301	1-124-229-00	ELECT	33MF	20%	10V	
C302	1-124-225-00	ELECT	100MF	20%	6.3V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN301	*1-564-012-00	PIN, CONNECTOR 2P	
CN302	*1-564-012-00	PIN, CONNECTOR 2P	
CN304	1-563-494-11	CONNECTOR, F.P.C 6P	
CN306	*1-564-012-00	PIN, CONNECTOR 2P	

DIODE

Ref.No	Part No.	Description	Remark
D301	8-719-100-03	DIODE 1S2835	
D302	8-719-100-03	DIODE 1S2835	
D303	8-719-100-03	DIODE 1S2835	
D304	8-719-801-41	DIODE 1SS196	
D305	8-719-801-41	DIODE 1SS196	
D306	8-719-801-41	DIODE 1SS196	
D307	8-719-200-27	DIODE E10DS2	
D308	8-719-200-27	DIODE E10DS2	
D309	8-719-100-05	DIODE 1S2837	
D310	8-719-200-27	DIODE E10DS2	

IC

Ref.No	Part No.	Description	Remark
IC301	8-759-908-81	IC MB3763PF	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
IC302	8-759-207-00	IC TA7733F	

DIODE

Ref.No	Part No.	Description	Remark
PH301	8-719-939-11	GP2S09-B	
PH302	8-719-939-11	GP2S09-B	
PH303	8-719-939-11	GP2S09-B	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q301	8-729-199-92	TRANSISTOR 2SD999	
Q302	8-729-901-05	TRANSISTOR DTA124EK	
Q303	8-729-900-53	TRANSISTOR DTC114EK	
Q304	8-729-901-05	TRANSISTOR DTA124EK	
Q305	8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q306	8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q307	8-729-901-04	TRANSISTOR DTA114EK	
Q308	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q309	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q310	8-729-903-30	TRANSISTOR DTC144TK	
Q311	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q312	8-729-903-30	TRANSISTOR DTC144TK	
Q313	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q314	8-729-903-30	TRANSISTOR DTC144TK	

RESISTOR

Ref.No	Part No.	Description				Remark
R301	1-216-190-00	METAL CHIP	470	5%	1/8W	
R302	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R303	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R304	1-216-170-00	METAL CHIP	68	5%	1/8W	
R305	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R308	1-216-150-00	METAL CHIP	10	5%	1/8W	
R309	1-216-150-00	METAL CHIP	10	5%	1/8W	
R310	1-216-178-00	METAL CHIP	150	5%	1/8W	
R311	1-216-178-00	METAL CHIP	150	5%	1/8W	
R312	1-216-178-00	METAL CHIP	150	5%	1/8W	
R313	1-216-160-00	METAL CHIP	27	5%	1/8W	
R314	1-216-170-00	METAL CHIP	68	5%	1/8W	
R315	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R316	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R317	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R319	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R320	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R321	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R323	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R324	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R325	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R327	1-216-154-00	METAL CHIP	15	5%	1/8W	

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*A-7060-564-A ME-4 BOARD, COMPLETE
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2-279-715-21 RIVET, NYLON

CAPACITOR

Ref.No	Part No.	Description			Remark
C701	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C702	1-123-616-00	ELECT	4.7MF	20%	25V
C703	1-123-647-00	ELECT	47MF	20%	6.3V
C704	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C705	1-123-647-00	ELECT	47MF	20%	6.3V
C706	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C707	1-123-661-00	ELECT	100MF	20%	6.3V
C708	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C709	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C710	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C711	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C712	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C713	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C714	1-162-637-91	CERAMIC CHIP	0.47MF		16V
C715	1-123-820-00	ELECT	33MF	20%	16V
C716	1-123-820-00	ELECT	33MF	20%	16V
C717	1-162-637-91	CERAMIC CHIP	0.47MF		16V
C718	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C719	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C720	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C721	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C722	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C723	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C724	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C725	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C726	1-123-616-00	ELECT	4.7MF	20%	25V
C727	1-135-101-21	TANTAL. CHIP	22MF	20%	6.3V
C728	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C729	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C730	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C731	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C732	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C733	1-135-095-00	TANTAL. CHIP	1.5MF	20%	10V
C734	1-135-096-21	TANTAL. CHIP	4.7MF	20%	10V
C735	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C736	1-135-093-21	TANTAL. CHIP	10MF	20%	10V
C737	1-135-096-21	TANTAL. CHIP	4.7MF	20%	10V
C738	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C739	1-135-125-21	TANTAL. CHIP	33MF	20%	10V
C740	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C741	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C742	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C743	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C744	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C745	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C746	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C747	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C748	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C749	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C750	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C751	1-163-107-00	CERAMIC CHIP	39PF	5%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C752	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C753	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C754	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C755	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C756	1-162-638-11	CERAMIC CHIP 1MF		16V
C757	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C758	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C759	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C760	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C761	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C762	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C763	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C764	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C765	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C766	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C767	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C768	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C769	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C770	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C771	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C772	1-135-093-21	TANTAL. CHIP 10MF	20%	10V
C773	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C774	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C775	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C776	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V

DIODE

Ref.No	Part No.	Description
D701	8-719-100-05	DIODE 1S2837
D702	8-719-801-52	DIODE 1SS190
D703	8-719-100-03	DIODE 1S2835
D704	8-719-101-23	DIODE 1SS123
D705	8-719-100-05	DIODE 1S2837
D706	8-719-801-52	DIODE 1SS190

FILTER

Ref.No	Part No.	Description
FL701	1-235-394-11	FILTER, LOW PASS (YH)

IC

Ref.No	Part No.	Description
IC701	8-759-908-09	IC CX20053
IC702	8-759-106-22	IC UPD4052BG
IC703	8-759-914-44	IC TL431CLPB
IC704	8-752-303-90	IC CX23039
IC705	8-752-015-10	IC CX20151

COIL

Ref.No	Part No.	Description
L701	1-410-389-11	INDUCTOR CHIP 47UH
L702	1-410-389-11	INDUCTOR CHIP 47UH

TRANSISTOR

Ref.No	Part No.	Description
Q701	8-729-109-44	TRANSISTOR 2SK94
Q702	8-729-109-44	TRANSISTOR 2SK94
Q703	8-729-109-44	TRANSISTOR 2SK94
Q704	8-729-100-66	TRANSISTOR 2SC1623
Q705	8-729-100-66	TRANSISTOR 2SC1623
Q706	8-729-100-66	TRANSISTOR 2SC1623
Q707	8-729-100-66	TRANSISTOR 2SC1623
Q708	8-729-100-66	TRANSISTOR 2SC1623
Q709	8-729-100-66	TRANSISTOR 2SC1623
Q710	8-729-100-66	TRANSISTOR 2SC1623
Q711	8-729-100-66	TRANSISTOR 2SC1623
Q712	8-729-100-66	TRANSISTOR 2SC1623
Q713	8-729-100-66	TRANSISTOR 2SC1623
Q714	8-729-100-66	TRANSISTOR 2SC1623
Q715	8-729-100-66	TRANSISTOR 2SC1623
Q716	8-729-100-66	TRANSISTOR 2SC1623
Q717	8-729-100-66	TRANSISTOR 2SC1623
Q718	8-729-100-76	TRANSISTOR 2SA812
Q719	8-729-100-76	TRANSISTOR 2SA812
Q720	8-729-100-76	TRANSISTOR 2SA812
Q721	8-729-100-76	TRANSISTOR 2SA812
Q722	8-729-100-66	TRANSISTOR 2SC1623
Q723	8-729-100-66	TRANSISTOR 2SC1623
Q724	8-729-100-66	TRANSISTOR 2SC1623
Q725	8-729-100-66	TRANSISTOR 2SC1623

RESISTOR

Ref.No	Part No.	Description			Remark
R705	1-216-073-00	METAL CHIP	10K	5%	1/10W
R706	1-216-089-00	METAL CHIP	47K	5%	1/10W
R707	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R708	1-216-035-00	METAL CHIP	270	5%	1/10W
R709	1-216-073-00	METAL CHIP	10K	5%	1/10W
R710	1-216-089-00	METAL CHIP	47K	5%	1/10W
R713	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R714	1-216-035-00	METAL CHIP	270	5%	1/10W
R717	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R718	1-216-035-00	METAL CHIP	270	5%	1/10W
R719	1-216-033-00	METAL CHIP	220	5%	1/10W
R720	1-216-033-00	METAL CHIP	220	5%	1/10W
R721	1-216-033-00	METAL CHIP	220	5%	1/10W
R722	1-216-033-00	METAL CHIP	220	5%	1/10W
R723	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R724	1-216-025-00	METAL CHIP	100	5%	1/10W
R725	1-216-049-00	METAL CHIP	1K	5%	1/10W
R726	1-216-081-00	METAL CHIP	22K	5%	1/10W
R727	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R728	1-216-081-00	METAL CHIP	22K	5%	1/10W
R729	1-216-081-00	METAL CHIP	22K	5%	1/10W
R730	1-216-081-00	METAL CHIP	22K	5%	1/10W
R731	1-216-081-00	METAL CHIP	22K	5%	1/10W
R732	1-216-081-00	METAL CHIP	22K	5%	1/10W
R733	1-216-081-00	METAL CHIP	22K	5%	1/10W
R734	1-216-081-00	METAL CHIP	22K	5%	1/10W
R735	1-216-081-00	METAL CHIP	22K	5%	1/10W
R736	1-216-109-00	METAL CHIP	330K	5%	1/10W
R737	1-216-105-00	METAL CHIP	220K	5%	1/10W
R738	1-216-081-00	METAL CHIP	22K	5%	1/10W

When indicating parts by reference number, please include the board name.

ME-4

Ref.No	Part No.	Description				Remark
R739	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R740	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R741	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R742	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R743	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R744	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R745	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R746	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R747	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R748	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R749	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R750	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R751	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R752	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R753	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R754	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R755	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R756	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R757	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R758	1-216-025-00	METAL CHIP	100	5%	1/10W	
R759	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R760	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R761	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R762	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R763	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R764	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R765	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R766	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R767	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R768	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R769	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R770	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R772	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R773	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R774	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R775	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R776	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R777	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R778	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R779	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R780	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R781	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R782	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R783	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R786	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R787	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R788	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R789	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R790	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R791	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R792	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R793	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R794	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	

Ref.No	Part No.	Description				Remark
R795	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R796	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R797	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R798	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R799	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R801	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R802	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R803	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R804	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R805	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R806	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R807	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R808	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R809	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R810	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R811	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R812	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R813	1-216-037-00	METAL CHIP	330	5%	1/10W	
R814	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R815	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R816	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R817	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R818	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R819	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R823	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R824	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R825	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R826	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R827	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R828	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R829	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R830	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R831	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R832	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R833	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R834	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R835	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R836	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R837	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R838	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R839	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R840	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R841	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R842	1-216-295-00	METAL CHIP	0	5%	1/10W	
R843	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R844	1-249-405-11	CARBON	100	5%	1/6W	
R845	1-249-417-11	CARBON	1K	5%	1/6W	

VARIABLE RESISTOR

RV701	1-230-870-21	RES, ADJ, METAL GLAZE 10K
RV702	1-230-870-21	RES, ADJ, METAL GLAZE 10K
RV703	1-230-870-21	RES, ADJ, METAL GLAZE 10K
RV704	1-230-870-21	RES, ADJ, METAL GLAZE 10K

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
RV705	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV706	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV707	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV708	1-230-871-21	RES, ADJ, METAL GLAZE 22K	
RV709	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV710	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV711	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV712	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV713	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV714	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV715	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV716	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV717	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV718	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV719	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV720	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV721	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV723	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV726	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV727	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV728	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV729	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV730	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV731	1-230-870-21	RES, ADJ, METAL GLAZE 10K	

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*A-7060-565-A CP-18 BOARD, COMPLETE

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A-7068-047-A DT-61 BOARD, COMPLETE

2-279-715-21 RIVET, NYLON
*3-712-574-01 RETAINER (CAMERA)

CAPACITOR

Ref.No	Part No.	Description		Remark
C701	1-162-637-91	CERAMIC CHIP 0.47MF		16V
C702	1-123-617-00	ELECT 10MF	20%	16V
C703	1-162-637-91	CERAMIC CHIP 0.47MF		16V
C704	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C705	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C706	1-162-637-91	CERAMIC CHIP 0.47MF		16V
C707	1-135-083-00	TANTAL. CHIP 0.47MF	20%	25V
C708	1-162-637-91	CERAMIC CHIP 0.47MF		16V
C709	1-123-616-00	ELECT 4.7MF	20%	25V
C710	1-131-388-41	ELECT 68MF	20%	6.3V
C711	1-163-089-00	CERAMIC CHIP 6PF	0.5PF	50V
C712	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C713	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C714	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C715	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C717	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C718	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C719	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C720	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C721	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C722	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C728	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C729	1-123-821-00	ELECT 47MF	20%	16V
C730	1-163-119-00	CERAMIC CHIP 120PF	5%	50V
C731	1-163-083-00	CERAMIC CHIP 1PF	0.25PF	50V
C732	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C733	1-135-104-00	TANTAL. CHIP 10MF	20%	4V
C734	1-123-617-00	ELECT 10MF	20%	16V
C735	1-135-104-00	TANTAL. CHIP 10MF	20%	4V
C736	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C737	1-135-096-21	TANTAL. CHIP 4.7MF	20%	10V
C738	1-162-638-11	CERAMIC CHIP 1MF		16V
C739	1-162-637-91	CERAMIC CHIP 0.47MF		16V
C740	1-135-096-21	TANTAL. CHIP 4.7MF	20%	10V
C741	1-124-229-00	ELECT 33MF	20%	10V
C742	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C743	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C744	1-124-245-00	ELECT 4.7MF	20%	16V
C745	1-124-233-00	ELECT 10MF	20%	6.3V
C748	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C749	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C750	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C751	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C752	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C753	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C762	1-123-645-00	ELECT 33MF	20%	10V
C763	1-123-646-00	ELECT 33MF	20%	6.3V
C764	1-123-645-00	ELECT 33MF	20%	10V
C765	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C768	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C769	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C770	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C771	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C772	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C773	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C774	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C775	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C776	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C777	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C778	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C779	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C780	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C781	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C782	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C783	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C784	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C785	1-124-566-11	ELECT 120MF	20%	6.3V
C786	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C787	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C788	1-163-083-00	CERAMIC CHIP 1PF	0.25PF	50V
C789	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C790	1-163-005-00	CERAMIC CHIP 470PF	10%	50V

✱ The IC701 and IC002 have not been mounted on the already mounted CP-18 board and DT-61 board respectively.
Moreover, each single IC does not become repair part but with a pair they become a CCD imager block (IU018-K-AA). (There is a CCD imager block in which IC701 is a single unit.)

When indicating parts by reference number, please include the board name.

CP-18

CONNECTOR

Ref.No	Part No.	Description	Remark
CN704	*1-564-005-00	PIN, CONNECTOR 6P	

TRIMMER

Ref.No	Part No.	Description	Remark
CT701	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30PF	

DIODE

Ref.No	Part No.	Description	Remark
D701	8-719-801-48	DIODE 1SS193	
D703	8-719-801-48	DIODE 1SS193	
D704	8-719-101-23	DIODE 1SS123	
D708	8-719-801-48	DIODE 1SS193	
D709	8-719-801-52	DIODE 1SS190	

DELAY LINE

Ref.No	Part No.	Description	Remark
DL701	1-415-448-11	DELAY LINE	

FILTER

Ref.No	Part No.	Description	Remark
FL701	1-235-277-00	FILTER, BAND PASS	

IC

Ref.No	Part No.	Description	Remark
IC701	**8-750-010-20**	IC IU018-K-AA (CCD IMAGER BLOCK)	
IC702	8-752-323-00	IC CXD1030M-T1	
IC703	8-759-933-27	IC CX20055-T1	

COIL

Ref.No	Part No.	Description	Remark
L701	1-408-958-21	MICRO INDUCTOR 1UH	
L702	1-410-387-21	INDUCTOR CHIP 33UH	
L703	1-410-381-11	INDUCTOR CHIP 10UH	
L704	1-421-904-21	COIL, CHOKE 47UH	
L706	1-410-369-11	INDUCTOR CHIP 1UH	
L707	1-410-387-21	INDUCTOR CHIP 33UH	
L708	1-410-387-21	INDUCTOR CHIP 33UH	
L709	1-410-369-11	INDUCTOR CHIP 1UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q701	8-729-175-72	TRANSISTOR 2SC2757-T33	
Q702	8-729-100-76	TRANSISTOR 2SA812	
Q703	8-729-100-66	TRANSISTOR 2SC1623	
Q704	8-729-175-72	TRANSISTOR 2SC2757-T33	
Q705	8-729-175-72	TRANSISTOR 2SC2757-T33	
Q708	8-729-100-66	TRANSISTOR 2SC1623	
Q709	8-729-100-66	TRANSISTOR 2SC1623	
Q710	8-729-100-66	TRANSISTOR 2SC1623	
Q711	8-729-901-03	TRANSISTOR DTC144WK	
Q712	8-729-901-04	TRANSISTOR DTA114EK	

RESISTOR

Ref.No	Part No.	Description	Remark
R701	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R702	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R703	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R704	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R705	1-216-025-00	METAL CHIP 100 5% 1/10W	
R706	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R707	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R708	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R709	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R710	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R711	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R712	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R713	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R714	1-216-039-00	METAL CHIP 390 5% 1/10W	
R715	1-216-039-00	METAL CHIP 390 5% 1/10W	
R716	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R717	1-216-041-00	METAL CHIP 470 5% 1/10W	
R719	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R720	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R721	1-216-043-00	METAL CHIP 560 5% 1/10W	
R722	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R723	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R725	1-216-295-00	METAL CHIP 0 5% 1/10W	
R733	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R734	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R735	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R736	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R737	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R738	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R739	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R740	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R741	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R742	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R743	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R744	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R745	1-216-025-00	METAL CHIP 100 5% 1/10W	
R746	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R747	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R748	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R749	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R750	1-216-295-00	METAL CHIP 0 5% 1/10W	
R751	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R752	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R753	1-216-022-00	METAL CHIP 75 5% 1/10W	
R754	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R755	1-216-082-00	METAL CHIP 24K 5% 1/10W	
R756	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R757	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R758	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R759	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R760	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R761	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R762	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R766	1-216-295-00	METAL CHIP 0 5% 1/10W	
R767	1-216-295-00	METAL CHIP 0 5% 1/10W	
R774	1-216-295-00	METAL CHIP 0 5% 1/10W	
R775	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R776	1-216-079-00	METAL CHIP 18K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R777	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R778	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R779	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R781	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R784	1-216-296-00	METAL CHIP	0	5%	1/8W	
R785	1-216-296-00	METAL CHIP	0	5%	1/8W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV701	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV702	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV703	1-230-287-00	RES, ADJ, METAL GLAZE 10K	

CRYSTAL

Ref.No	Part No.	Description	Remark
X701	1-567-708-11	VIBRATOR, CRYSTAL (28MHz)	

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*A-7060-567-A AW-3 BOARD, COMPLETE

CAPACITOR

Ref.No	Part No.	Description				Remark
C701	1-124-224-00	ELECT	47MF	20%	6.3V	
C702	1-124-224-00	ELECT	47MF	20%	6.3V	
C703	1-162-638-11	CERAMIC CHIP	1MF		16V	
C704	1-162-638-11	CERAMIC CHIP	1MF		16V	
C705	1-162-638-11	CERAMIC CHIP	1MF		16V	
C706	1-136-287-11	FILM	0.0047MF	5%	100V	
C707	1-136-293-11	FILM	0.0082MF	5%	100V	
C708	1-136-293-11	FILM	0.0082MF	5%	100V	
C709	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C710	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C711	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C712	1-124-224-00	ELECT	47MF	20%	6.3V	
C713	1-124-224-00	ELECT	47MF	20%	6.3V	
C714	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C715	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C716	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C717	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C718	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C719	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C722	1-163-081-00	CERAMIC CHIP	0.22MF		25V	
C723	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V	
C724	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V	
C725	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C726	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C727	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C728	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C729	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C730	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C731	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C732	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN702	*1-564-008-00	PIN, CONNECTOR 9P	
CN703	*1-564-008-00	PIN, CONNECTOR 9P	
CN704		BOARD TO BOARD CONNECTOR (11P)	

DIODE

Ref.No	Part No.	Description	Remark
D701	8-719-100-05	DIODE 1S2837	
D703	**8-719-801-48**	DIODE 1SS193	
D704	**8-719-801-48**	DIODE 1SS193	
D705	**8-719-801-48**	DIODE 1SS193	
D706	**8-719-801-48**	DIODE 1SS193	

IC

Ref.No	Part No.	Description	Remark
IC701	8-752-322-56	IC CXD1073Q	
IC702	8-759-103-25	IC UPD4053BG	
IC703	8-759-103-03	IC UPD6107G	
IC704	8-759-106-23	IC UPD4066BG	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q701	8-729-901-06	TRANSISTOR DTA144EK	
Q702	8-729-100-76	TRANSISTOR 2SA812	

RESISTOR

Ref.No	Part No.	Description				Remark
R701	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R702	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R703	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R704	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R705	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R706	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R709	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R710	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R711	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R712	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R713	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R714	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R715	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R716	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R717	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R718	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R719	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R720	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R721	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R722	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R723	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R726	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R727	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R728	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R729	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R732	1-216-295-00	METAL CHIP	0	5%	1/10W	
R734	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R735	1-216-107-00	METAL CHIP	270K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
		VARIABLE RESISTOR	
RV701	1-230-871-21	RES, ADJ, METAL GLAZE 22K	
RV702	1-230-871-21	RES, ADJ, METAL GLAZE 22K	

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	*A-7060-568-A	AT-5 BOARD, COMPLETE *********************	
		CAPACITOR	
C851	1-163-205-00	CERAMIC CHIP 0.001MF 5%	50V
C852	1-163-205-00	CERAMIC CHIP 0.001MF 5%	50V
C853	1-163-205-00	CERAMIC CHIP 0.001MF 5%	50V
C854	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C855	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C856	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C857	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C858	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C859	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C860	1-163-141-00	CERAMIC CHIP 0.001MF 5%	50V
C861	1-135-091-00	TANTAL. CHIP 1MF 20%	16V
C862	1-124-224-00	ELECT 47MF 20%	6.3V
C863	1-124-224-00	ELECT 47MF 20%	6.3V
C864	1-162-638-11	CERAMIC CHIP 1MF	16V
C866	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V
		CONNECTOR	
CN851	*1-564-005-00	PIN, CONNECTOR 6P	
CN852	*0-343-112-00		
		IC	
IC851	8-759-908-12	IC CX20056	
		TRANSISTOR	
Q851	8-729-100-76	TRANSISTOR 2SA812	
Q852	8-729-901-06	TRANSISTOR DTA144EK	
Q853	8-729-100-76	TRANSISTOR 2SA812	
Q854	8-729-901-01	TRANSISTOR DTC144EK	
Q855	8-729-100-66	TRANSISTOR 2SC1623	
Q856	8-729-100-76	TRANSISTOR 2SA812	
Q857	8-729-100-76	TRANSISTOR 2SA812	
Q858	8-729-100-66	TRANSISTOR 2SC1623	
Q859	8-729-100-76	TRANSISTOR 2SA812	
Q860	8-729-100-76	TRANSISTOR 2SA812	
Q861	8-729-100-66	TRANSISTOR 2SC1623	
Q862	8-729-100-76	TRANSISTOR 2SA812	
		RESISTOR	
R851	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R852	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R853	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R855	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R856	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R857	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R858	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R859	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R860	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R861	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R862	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R863	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R866	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R867	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R868	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R869	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R871	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R872	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R873	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R874	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R875	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R876	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R877	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R878	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R879	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R880	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R881	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R882	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R884	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R885	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R886	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R887	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R888	1-216-085-00	METAL CHIP 33K 5% 1/10W	
		VARIABLE RESISTOR	
RV851	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV852	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV853	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV854	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV855	1-230-287-00	RES, ADJ, METAL GLAZE 10K	

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	A-7060-430-A	SS-64 BOARD, COMPLETE **********************	
	2-279-715-21	RIVET, NYLON	
	*3-712-397-01	PLATE, GROUND, TOP	
	3-712-398-01	REINFORCEMENT (31)	
		CAPACITOR	
C301	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C302	1-163-103-00	CERAMIC CHIP 27PF 5%	50V
C303	1-163-103-00	CERAMIC CHIP 27PF 5%	50V
C304	1-124-234-00	ELECT 22MF 20%	16V
C305	1-124-222-00	ELECT 22MF 20%	6.3V
C306	1-124-233-00	ELECT 10MF 20%	10V
C307	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C308	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C309	1-135-099-00	TANTAL. CHIP 2.2MF 20%	6.3V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C311	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C312	1-163-103-00	CERAMIC CHIP 27PF	5%	50V
C313	1-163-103-00	CERAMIC CHIP 27PF	5%	50V
C314	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C315	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C316	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C318	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C321	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C322	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C323	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C325	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C327	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C329	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C330	1-163-034-00	CERAMIC CHIP 0.033MF	10%	25V
C331	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C332	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C333	1-161-013-00	CERAMIC 0.01MF	10%	25V
C335	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C501	1-124-222-00	ELECT 22MF	20%	6.3V
C502	1-124-257-00	ELECT 2.2MF	20%	35V
C503	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C504	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C505	1-124-233-00	ELECT 10MF	20%	6.3V
C506	1-163-020-00	CERAMIC CHIP 0.0082MF	10%	50V
C507	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C508	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C509	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C510	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C511	1-124-499-11	ELECT 1MF	20%	50V
C514	1-126-099-11	ELECT 2.2MF	20%	35V
C516	1-126-100-11	ELECT 10MF	20%	6.3V
C518	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C519	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C520	1-163-692-11	CERAMIC CHIP 0.0015MF	5%	50V
C521	1-163-692-11	CERAMIC CHIP 0.0015MF	5%	50V
C524	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C525	1-126-099-11	ELECT 2.2MF	20%	35V
C526	1-163-075-00	CERAMIC CHIP 0.047MF	10%	25V
C527	1-124-499-11	ELECT 1MF	20%	50V
C529	1-124-499-11	ELECT 1MF	20%	50V
C531	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V
C532	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C533	1-124-233-00	ELECT 10MF	20%	10V
C534	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C535	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C536	1-163-137-00	CERAMIC CHIP 680PF	5%	50V
C537	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C538	1-135-093-21	TANTAL. CHIP 10MF	20%	6.3V
C540	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C541	1-126-099-11	ELECT 2.2MF	20%	35V
C543	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C544	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V

Ref.No	Part No.	Description		Remark
C545	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C546	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C547	1-163-139-00	CERAMIC CHIP 820PF	5%	50V
C548	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C549	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C550	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C553	1-124-222-00	ELECT 22MF	20%	6.3V
C554	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C555	1-124-233-00	ELECT 10MF	20%	6.3V
C556	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C557	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C558	1-124-258-00	ELECT 3.3MF	20%	25V
C559	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C560	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C561	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C651	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C652	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V
C653	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C654	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C655	1-163-034-00	CERAMIC CHIP 0.033MF	10%	25V
C656	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C657	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C658	1-124-233-00	ELECT 10MF	20%	6.3V
C659	1-135-099-00	TANTAL. CHIP 2.2MF	20%	6.3V
C660	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C661	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C662	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C663	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C664	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C665	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C666	1-163-034-00	CERAMIC CHIP 0.033MF	10%	25V
C667	1-163-034-00	CERAMIC CHIP 0.033MF	10%	25V
C669	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C670	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C672	1-163-033-00	CERAMIC CHIP 0.022MF		50V

CONNECTOR

Ref.No	Part No.	Description
CN301	*1-564-029-00	PIN, CONNECTOR 4P
CN302	*1-564-013-00	PIN, CONNECTOR 3P
CN303	*1-564-013-00	PIN, CONNECTOR 3P
CN304	*1-564-012-00	PIN, CONNECTOR 2P
CN305	*1-564-014-00	PIN, CONNECTOR 4P
CN306	*1-564-012-00	PIN, CONNECTOR 2P
CN307	*1-562-887-11	CONNECTOR, F.P.C 20P
CN308	*1-564-020-00	PIN, CONNECTOR 10P
CN309	1-563-492-11	CONNECTOR, F.P.C 19P
CN310	*1-564-014-00	PIN, CONNECTOR 4P
CN311	*1-564-003-00	PIN, CONNECTOR 4P
CN313	*1-564-016-00	PIN, CONNECTOR 6P
CN314	*1-564-012-00	PIN, CONNECTOR 2P
CN501	1-563-492-11	CONNECTOR, F.P.C 19P
CN504	*1-564-014-00	PIN, CONNECTOR 4P

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
		DIODE	
D301	8-719-100-03	DIODE 1S2835	
D303	8-719-914-11	DIODE HZ4ALL	
D304	8-719-914-11	DIODE HZ4ALL	
D305	8-719-100-03	DIODE 1S2835	
D501	8-719-101-23	DIODE 1SS123	
D503	8-719-101-23	DIODE 1SS123	
D505	8-719-801-41	DIODE 1SS196	
D651	8-719-801-41	DIODE 1SS196	
		FILTER	
FL501	1-235-612-11	BPF (16KHz)	
FL502	1-235-611-11	BPF (46KHz)	
		IC	
IC301	8-752-800-73	IC CXP5048H-021Q	
IC302	8-759-800-72	IC CXP5048H-026Q	
IC303	8-759-925-43	IC MSM6411B-26GS-VK	
IC304	8-759-100-93	IC UPC393G2	
IC305	⚠8-759-922-54	IC S-81250AG	
IC306	8-759-913-41	IC S-8054ALB	
IC307	8-759-100-92	IC UPC4250G2	
IC501	8-759-107-68	IC CX20115A	
IC502	8-752-003-50	IC CX20035	
IC504	8-759-100-95	IC UPC324G2	
IC505	8-759-925-66	IC BA6303F	
IC506	8-759-201-01	IC TC4066BF	
IC507	8-759-201-00	IC TC4052BF	
IC508	8-759-201-80	IC TC4526BF	
IC509	8-759-928-56	IC CXA1042M	
IC651	8-759-100-93	IC UPC393G2	
		COIL	
L301	1-408-987-21	MICRO INDUCTOR 330UH	
L302	1-408-795-21	INDUCTOR CHIP 330UH	
L303	1-408-795-21	INDUCTOR CHIP 330UH	
L304	⚠1-410-389-21	INDUCTOR CHIP 47UH	
L501	1-407-165-XX	MICRO INDUCTOR 47UH	
L502	1-408-987-21	MICRO INDUCTOR 330UH	
L503	1-408-948-00	MICRO INDUCTOR 220UH	
		IC LINK	
PS301	⚠1-532-605-11	LINK, IC (ICP-N10)	
		TRANSISTOR	
Q301	8-729-900-98	TRANSISTOR DTC143TK	
Q302	8-729-900-98	TRANSISTOR DTC143TK	
Q303	8-729-900-98	TRANSISTOR DTC143TK	
Q304	8-729-900-06	TRANSISTOR DTA144EK	
Q305	8-729-900-06	TRANSISTOR DTA144EK	

Ref.No	Part No.	Description	Remark
Q306	8-729-900-06	TRANSISTOR DTA144EK	
Q307	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q308	8-729-901-01	TRANSISTOR DTC144EK	
Q309	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q310	8-729-901-01	TRANSISTOR DTC144EK	
Q311	8-729-900-98	TRANSISTOR DTC143TK	
Q312	8-729-901-06	TRANSISTOR DTA144EK	
Q313	8-729-900-98	TRANSISTOR DTC143TK	
Q314	8-729-901-06	TRANSISTOR DTA144EK	
Q315	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q316	8-729-100-76	TRANSISTOR 2SA812	
Q317	⚠8-729-105-29	TRANSISTOR 2SA1385	
Q318	8-729-901-06	TRANSISTOR DTA144EK	
Q319	8-729-901-06	TRANSISTOR DTA144EK	
Q320	8-729-901-01	TRANSISTOR DTC144EK	
Q321	8-729-901-01	TRANSISTOR DTC144EK	
Q322	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q323	8-729-100-76	TRANSISTOR 2SA812	
Q324	8-729-901-06	TRANSISTOR DTA144EK	
Q325	8-729-901-01	TRANSISTOR DTC144EK	
Q326	8-729-901-01	TRANSISTOR DTC144EK	
Q329	8-729-901-01	TRANSISTOR DTC144EK	
Q331	8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q332	8-729-901-06	TRANSISTOR DTA144EK	
Q333	8-729-901-01	TRANSISTOR DTC144EK	
Q334	8-729-600-27	TRANSISTOR 2SC634SP	
Q501	8-729-100-76	TRANSISTOR 2SA812	
Q502	8-729-903-29	TRANSISTOR DTA144TK	
Q503	8-729-901-04	TRANSISTOR DTA114EK	
Q504	8-729-100-76	TRANSISTOR 2SA812	
Q505	8-729-100-76	TRANSISTOR 2SA812	
Q506	8-729-100-66	TRANSISTOR 2SC1623	
Q507	8-729-100-66	TRANSISTOR 2SC1623	
Q508	8-729-901-06	TRANSISTOR DTA144EK	
Q509	8-729-100-76	TRANSISTOR 2SA812	
Q510	8-729-901-06	TRANSISTOR DTA144EK	
Q511	8-729-901-01	TRANSISTOR DTC144EK	
Q512	8-729-901-01	TRANSISTOR DTC144EK	
Q513	8-729-901-01	TRANSISTOR DTC144EK	
Q514	8-729-100-66	TRANSISTOR 2SC1623	
Q515	8-729-903-29	TRANSISTOR DTA144TK	
Q516	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q517	8-729-100-76	TRANSISTOR 2SA812	
Q518	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q519	8-729-100-76	TRANSISTOR 2SA812	
Q520	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q521	8-729-199-92	TRANSISTOR 2SD999	
Q522	8-729-199-92	TRANSISTOR 2SD999	
Q523	8-729-901-06	TRANSISTOR DTA144EK	
Q524	8-729-901-01	TRANSISTOR DTC144EK	
Q525	8-729-901-06	TRANSISTOR DTA144EK	
Q651	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q652	8-729-100-76	TRANSISTOR 2SA812	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
Q653	8-729-100-67	TRANSISTOR	2SC1623-L7			
Q654	8-729-100-76	TRANSISTOR	2SA812			
Q655	8-729-100-67	TRANSISTOR	2SC1623-L7			
Q656	8-729-100-76	TRANSISTOR	2SA812			
Q657	8-729-901-06	TRANSISTOR	DTA144EK			
		RESISTOR				
R301	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R302	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R303	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R304	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R305	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R306	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R307	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R308	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R309	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R310	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R311	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R312	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R313	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R314	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R315	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R316	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R317	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R318	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R319	1-216-041-00	METAL CHIP	470	5%	1/10W	
R320	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R321	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R322	1-216-045-00	METAL CHIP	680	5%	1/10W	
R323	1-216-194-00	METAL CHIP	680	5%	1/8W	
R324	1-216-194-00	METAL CHIP	680	5%	1/8W	
R325	1-216-194-00	METAL CHIP	680	5%	1/8W	
R326	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R327	1-216-123-11	METAL CHIP	1.2M	5%	1/10W	
R328	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R329	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R330	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R331	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R332	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R333	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R334	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R335	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R336	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R337	1-216-047-00	METAL CHIP	820	5%	1/10W	
R338	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R339	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R340	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R341	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R342	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R343	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R344	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R345	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R346	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R347	1-216-129-00	METAL CHIP	2.2M	5%	1/10W	
R348	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R349	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R350	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R351	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R353	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R354	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R355	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R356	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R357	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R359	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R360	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R361	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R362	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R363	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R364	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R365	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R366	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R367	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R368	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R369	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R370	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R371	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R372	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R375	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R376	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R377	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R378	1-216-174-00	METAL CHIP	100	5%	1/8W	
R379	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R380	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R383	1-216-295-00	METAL CHIP	0	5%	1/10W	
R385	1-216-295-00	METAL CHIP	0	5%	1/10W	
R387	1-216-295-00	METAL CHIP	0	5%	1/10W	
R389	1-216-295-00	METAL CHIP	0	5%	1/10W	
R390	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R391	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R392	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R393	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R394	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R395	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R396	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R397	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R398	1-216-295-00	METAL CHIP	0	5%	1/10W	
R501	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R502	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R503	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R504	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R505	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R506	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R507	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R508	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R509	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R510	1-216-093-00	METAL CHIP	68K	5%	1/10W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R511	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R512	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R513	1-216-295-00	METAL CHIP	0	5%	1/10W	
R514	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R516	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R517	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R518	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R519	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R520	1-216-06-00	METAL CHIP	5.6K	5%	1/10W	
R521	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R522	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R523	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R524	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R525	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R526	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R527	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R528	1-216-182-00	METAL CHIP	220	5%	1/8W	
R530	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R531	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R534	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R535	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R536	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R537	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R538	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R539	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R540	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R541	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R542	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R543	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R544	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R545	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R546	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R547	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R548	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R549	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R550	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R551	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R552	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R553	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R554	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R555	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R556	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R557	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R557	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R558	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R559	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R560	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R561	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R562	1-216-295-00	METAL CHIP	0	5%	1/10W	
R563	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R566	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R567	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R568	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R569	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R570	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R571	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R572	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R573	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R574	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R575	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R576	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R577	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R578	1-216-047-00	METAL CHIP	820	5%	1/10W	
R579	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R580	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R581	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R583	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R585	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R586	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R587	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R590	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R591	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R593	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R599	1-216-295-00	METAL CHIP	0	5%	1/10W	
R651	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R652	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R653	1-216-045-00	METAL CHIP	680	5%	1/10W	
R654	1-216-025-00	METAL CHIP	100	5%	1/10W	
R655	1-216-029-00	METAL CHIP	150	5%	1/10W	
R656	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R657	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R658	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R659	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R660	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R661	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R662	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R663	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R664	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R665	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R666	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R667	1-216-295-00	METAL CHIP	0	5%	1/10W	
R668	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R669	1-216-119-00	METAL CHIP	820K	5%	1/10W	
R670	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R671	1-216-045-00	METAL CHIP	680	5%	1/10W	
R672	1-216-031-00	METAL CHIP	180	5%	1/10W	
R673	1-216-047-00	METAL CHIP	820	5%	1/10W	
R674	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R675	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R676	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R677	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R678	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R679	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R680	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R681	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R682	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R683	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R684	1-216-119-00	METAL CHIP	820K	5%	1/10W	
R685	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R686	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R687	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R688	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R689	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R691	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R695	1-247-889-00	CARBON	270K	5%	1/6W	
R696	1-249-429-11	CARBON	10K	5%	1/6W	

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV301	1-230-867-11	RES, ADJ, METAL GLAZE 1K
RV501	1-230-874-11	RES, ADJ, METAL GLAZE 100K
RV502	1-230-873-11	RES, ADJ, METAL GLAZE 47K

CRYSTAL

Ref.No	Part No.	Description
X301	1-567-346-11	OSCILLATOR, CERAMIC (5MHz)
X302	1-567-346-11	OSCILLATOR, CERAMIC (5MHz)
X303	1-567-192-11	OSCILLATOR, CERAMIC (4MHz)

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A-7060-384-A DR-36 BOARD, COMPLETE

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CAPACITOR

Ref.No	Part No.	Description			
C501	1-123-611-00	ELECT	1MF	20%	50V
C502	1-123-611-00	ELECT	1MF	20%	50V
C503	1-124-255-00	ELECT	1MF	20%	50V
C504	1-124-258-00	ELECT	3.3MF	20%	25V
C505	1-124-255-00	ELECT	1MF	20%	50V
C506	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V
C507	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C508	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C509	1-126-099-11	ELECT	2.2MF	20%	35V
C511	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C512	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C513	1-124-577-11	ELECT	82MF	20%	10V
C514	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C515	1-124-577-11	ELECT	82MF	20%	10V
C516	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C517	1-123-617-00	ELECT	10MF	20%	16V
C518	1-124-233-00	ELECT	10MF	20%	16V
C519	1-124-233-00	ELECT	10MF	20%	16V
C520	1-124-577-11	ELECT	82MF	20%	10V
C521	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C522	1-124-596-11	ELECT	27MF	20%	16V
C523	1-124-596-11	ELECT	27MF	20%	16V
C524	1-124-596-11	ELECT	27MF	20%	16V
C525	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C527	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN312	*1-564-012-00	PIN, CONNECTOR 2P	

DIODE

Ref.No	Part No.	Description
D501	8-719-200-35	DIODE E10QS03
D502	8-719-200-35	DIODE E10QS03
D503	8-719-200-35	DIODE E10QS03

IC

Ref.No	Part No.	Description
IC501	8-759-202-45	IC CX20114
IC502	8-752-003-60	IC CX20036

COIL

Ref.No	Part No.	Description
L501	1-410-628-11	COIL, CHOKE 200UH
L502	1-410-628-11	COIL, CHOKE 200UH
L503	1-410-628-11	COIL, CHOKE 200UH

TRANSISTOR

Ref.No	Part No.	Description
Q501	8-729-100-76	TRANSISTOR 2SA812
Q502	8-729-901-01	TRANSISTOR DTC144EK
Q503	8-729-100-76	TRANSISTOR 2SA812
Q504	8-729-100-67	TRANSISTOR 2SC1623-L7
Q505	⚠8-729-106-40	TRANSISTOR 2SB1114-ZK
Q506	8-729-106-40	TRANSISTOR 2SB1114-ZK
Q507	8-729-700-10	NJL7141E-S
Q508	8-729-100-67	TRANSISTOR 2SC1623-L7

RESISTOR

Ref.No	Part No.	Description			
R501	1-216-073-00	METAL CHIP	10K	5%	1/10W
R502	1-216-049-00	METAL CHIP	1K	5%	1/10W
R503	1-216-085-00	METAL CHIP	33K	5%	1/10W
R504	1-216-081-00	METAL CHIP	22K	5%	1/10W
R505	1-216-047-00	METAL CHIP	820	5%	1/10W
R506	1-216-089-00	METAL CHIP	47K	[illegible]	1/10W
[illegible]	[illegible]	[illegible]	[illegible]	5%	1/10W
R508	1-216-101-00	METAL CHIP	150K	5%	1/10W
R509	1-216-041-00	METAL CHIP	470	5%	1/10W
R510	1-216-089-00	METAL CHIP	47K	5%	1/10W
R511	1-216-099-00	METAL CHIP	120K	5%	1/10W
R512	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R513	1-216-049-00	METAL CHIP	1K	5%	1/10W
R514	1-216-049-00	METAL CHIP	1K	5%	1/10W
R515	1-216-295-00	METAL CHIP	0	5%	1/10W
R516	1-216-113-00	METAL CHIP	470K	5%	1/10W
R517	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R518	1-216-073-00	METAL CHIP	10K	5%	1/10W
R519	1-216-025-00	METAL CHIP	100	5%	1/10W
R520	1-216-077-00	METAL CHIP	15K	5%	1/10W
R521	1-216-077-00	METAL CHIP	15K	5%	1/10W
R522	1-216-049-00	METAL CHIP	1K	5%	1/10W
R523	1-214-972-00	METAL	0.22	5%	1/4W
R524	1-216-061-00	METAL CHIP	3.3K	5%	1/10W

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

DR-36 TS-55 AI-1

Ref.No	Part No.	Description				Remark
R525	1-216-041-00	METAL CHIP	470	5%	1/10W	
R526	1-216-041-00	METAL CHIP	470	5%	1/10W	
R527	1-216-304-11	METAL CHIP	3.3	5%	1/10W	
R528	1-216-304-11	METAL CHIP	3.3	5%	1/10W	
R529	1-216-304-11	METAL CHIP	3.3	5%	1/10W	
R530	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R531	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R532	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R533	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R534	1-216-089-00	METAL CHIP	47K	5%	1/10W	

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A-7060-541-A TS-55 BOARD, COMPLETE

*X-3686-836-1 HOLDER ASSY, TOP

CONNECTOR

Ref.No	Part No.	Description
CN506	*1-562-887-11	CONNECTOR, F.P.C 20P
CN507	*1-564-018-11	PIN, CONNECTOR 8P

TRANSISTOR

Ref.No	Part No.	Description
Q501	8-729-700-10	NJL7141E-S

RESISTOR

Ref.No	Part No.	Description			
R501	1-216-081-00	METAL CHIP	22K	5%	1/10W
R502	1-216-079-00	METAL CHIP	18K	5%	1/10W
R505	1-216-081-00	METAL CHIP	22K	5%	1/10W
R506	1-216-079-00	METAL CHIP	18K	5%	1/10W
R507	1-216-081-00	METAL CHIP	22K	5%	1/10W
R508	1-216-079-00	METAL CHIP	18K	5%	1/10W
R509	1-216-295-00	METAL CHIP	0	5%	1/10W
R511	1-216-295-00	METAL CHIP	0	5%	1/10W

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV501	1-230-528-11	RES, ADJ, METAL GLAZE 220K
RV502	1-230-524-11	RES, ADJ, METAL GLAZE 22K
RV503	1-230-524-11	RES, ADJ, METAL GLAZE 22K
RV504	1-230-524-11	RES, ADJ, METAL GLAZE 22K
RV506	1-230-526-11	RES, ADJ, METAL GLAZE 47K
RV507	1-230-528-11	RES, ADJ, METAL GLAZE 220K
RV508	1-230-529-11	RES, ADJ, METAL GLAZE 470K

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*A-7060-573-A AI-1 BOARD, COMPLETE

CAPACITOR

Ref.No	Part No.	Description			Remark
C781	1-124-224-00	ELECT	47MF	20%	6.3V
C782	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C783	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C784	1-163-081-00	CERAMIC CHIP	0.22MF		25V
C785	1-124-222-00	ELECT	22MF	20%	6.3V
C786	1-124-222-00	ELECT	22MF	20%	6.3V
C787	1-124-222-00	ELECT	22MF	20%	6.3V
C789	1-124-236-00	ELECT	47MF	20%	10V
C790	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C791	1-124-236-00	ELECT	47MF	20%	10V
C792	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C793	1-124-255-00	ELECT	1MF	20%	50V
C794	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C795	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C797	1-131-375-00	TANTALUM	4.7MF	10%	10V

CONNECTOR

Ref.No	Part No.	Description
CN781	*1-564-007-00	PIN, CONNECTOR 8P
CN782	*1-564-003-00	PIN, CONNECTOR 4P

DIODE

Ref.No	Part No.	Description
D781	8-719-801-48	DIODE 1SS193
D782	8-719-801-48	DIODE 1SS193
D783	8-719-801-48	DIODE 1SS193
D784	8-719-801-48	DIODE 1SS193
D785	8-719-101-23	DIODE 1SS123
D786	8-719-101-23	DIODE 1SS123
D789	8-719-801-48	DIODE 1SS193

IC

Ref.No	Part No.	Description
IC781	8-759-100-95	IC UPC324G2
IC782	8-759-100-95	IC UPC324G2
IC783	8-759-103-25	IC UPD4053BG
IC784	8-759-103-03	IC UPD6107G

TRANSISTOR

Ref.No	Part No.	Description
Q781	8-729-100-76	TRANSISTOR 2SA812
Q782	8-729-100-66	TRANSISTOR 2SC1623
Q783	8-729-100-76	TRANSISTOR 2SA812
Q784	8-729-100-66	TRANSISTOR 2SC1623
Q785	8-729-100-66	TRANSISTOR 2SC1623
Q786	8-729-100-76	TRANSISTOR 2SA812
Q787	8-729-100-76	TRANSISTOR 2SA812
Q788	8-729-100-66	TRANSISTOR 2SC1623
Q789	8-729-100-76	TRANSISTOR 2SA812
Q790	8-729-901-01	TRANSISTOR DTC144EK
Q791	8-729-100-66	TRANSISTOR 2SC1623
Q792	8-729-100-76	TRANSISTOR 2SA812
Q793	8-729-100-76	TRANSISTOR 2SA812

RESISTOR

Ref.No	Part No.	Description			
R781	1-216-107-00	METAL CHIP	270K	5%	1/10W
R782	1-216-049-00	METAL CHIP	1K	5%	1/10W
R783	1-216-073-00	METAL CHIP	10K	5%	1/10W
R784	1-216-073-00	METAL CHIP	10K	5%	1/10W
R785	1-216-073-00	METAL CHIP	10K	5%	1/10W
R786	1-216-089-00	METAL CHIP	47K	5%	1/10W
R787	1-216-065-00	METAL CHIP	4.7K	5%	1/10W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R788	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R789	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R790	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R791	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R792	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R793	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R794	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R795	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R796	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R797	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R798	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R799	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R800	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R801	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R802	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R803	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R804	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R805	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R806	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R809	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R810	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R811	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R812	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R813	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R814	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R815	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R816	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R817	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R818	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R819	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R820	1-216-041-00	METAL CHIP	470	5%	1/10W	
R821	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R822	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R823	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R824	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R825	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R826	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R827	1-216-011-00	METAL CHIP	27	5%	1/10W	
R828	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R829	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R830	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R831	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R832	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R833	1-216-021-00	METAL CHIP	68	5%	1/10W	
R834	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R835	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R836	1-216-025-00	METAL CHIP	100	5%	1/10W	
R837	1-216-089-00	METAL CHIP	47K	5%	1/10W	

VARIABLE RESISTOR

RV781	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K
RV782	1-230-871-21	RES, ADJ, METAL GLAZE 22K

Ref.No	Part No.	Description	Remark
	*A-7060-575-A	CG-1 BOARD, COMPLETE **********************	
	3-573-141-00	WASHER (B), THRUST	
	3-712-106-01	REINFORCEMENT (333)	

CAPACITOR

C671	1-124-222-00	ELECT	22MF	20%	6.3V
C673	1-131-375-00	TANTALUM	4.7MF	10%	10V
C674	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C675	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C676	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C677	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C678	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C679	1-163-109-00	CERAMIC CHIP	47PF	5%	50V

CONNECTOR

CN671	*1-564-008-61	PIN, CONNECTOR 9P
CN672	*1-564-006-51	PIN, CONNECTOR 7P

TRIMMER

CT671	1-141-331-11	CAP, VAR, TRIMMER (CHIP)

IC

IC671	8-759-106-63	IC UPD74HC02G
IC672	8-759-106-89	IC UPD74HC157G
IC673	8-759-204-96	IC UPD74HC04G
IC675	8-759-107-89	IC UPD6105G-102
IC676	8-759-107-89	IC UPD6105G-102
IC677	8-759-106-96	IC UPD74HC174G
IC678	8-759-106-96	IC UPD74HC174G

COIL

L671	1-408-970-21	MICRO INDUCTOR 10UH
L672	1-407-166-XX	MICRO INDUCTOR 56UH

TRANSISTOR

Q671	8-729-901-06	TRANSISTOR DTA144EK
Q672	8-729-100-66	TRANSISTOR 2SC1623
Q673	8-729-903-30	TRANSISTOR DTC144TK
Q674	8-729-903-30	TRANSISTOR DTC144TK

RESISTOR

R671	1-216-097-00	METAL CHIP	100K	5%	1/10W
R672	1-216-097-00	METAL CHIP	100K	5%	1/10W
R674	1-216-031-00	METAL CHIP	180	5%	1/10W
R675	1-216-054-00	METAL CHIP	1.6K	5%	1/10W
R676	1-216-073-00	METAL CHIP	10K	5%	1/10W
R677	1-216-062-00	METAL CHIP	3.6K	5%	1/10W
R678	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R679	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R680	1-216-062-00	METAL CHIP	3.6K	5%	1/10W
R681	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R682	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R683	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R684	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R685	1-216-295-00	METAL CHIP	0	5%	1/10W
R686	1-216-049-00	METAL CHIP	1K	5%	1/10W
R687	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

When indicating parts by reference number, please include the board name.

CG-1 TI-8 VF-7

Ref.No	Part No.	Description				Remark
R688	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R689	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R690	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R697	1-211-451-00	CARBON	1K	5%	1/8W	F
R697	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R698	1-216-049-00	METAL CHIP	1K	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV671	1-230-226-00	RES, VAR, CARBON 10K(IRIS)

SWITCH

Ref.No	Part No.	Description
S671	1-553-977-00	SWITCH, SLIDE(FOCUS)
S672	1-554-945-12	SWITCH, SLIDE(WHITE BALANCE)
S673	1-553-977-00	SWITCH, SLIDE(SENS)
S674	1-554-364-00	SWITCH, SLIDE(CAMERA POWER SW)

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*1-620-154-11 TI-8 BOARD
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1-554-371-31 SWITCH, TACT

DIODE

Ref.No	Part No.	Description
D691	8-719-918-66	DIODE GL-1HY102
D692	8-719-918-67	DIODE GL-1EG102
D693	8-719-100-05	DIODE 1S2837
D694	8-719-100-05	DIODE 1S2837
D695	8-719-100-05	DIODE 1S2837

TRANSISTOR

Ref.No	Part No.	Description
Q691	8-729-903-29	TRANSISTOR DTA144TK
Q692	8-729-901-03	TRANSISTOR DTC144WK
Q693	8-729-901-03	TRANSISTOR DTC144WK

RESISTOR

Ref.No	Part No.	Description			
R691	1-216-049-00	METAL CHIP	1K	5%	1/10W
R692	1-216-049-00	METAL CHIP	1K	5%	1/10W
R693	1-216-049-00	METAL CHIP	1K	5%	1/10W
R694	1-216-049-00	METAL CHIP	1K	5%	1/10W

SWITCH

Ref.No	Part No.	Description
S691	1-554-371-31	SWITCH, TACT (PUSH AUTO)
S692	1-554-371-31	SWITCH, TACT (MAIN)
S693	1-554-371-31	SWITCH, TACT (SUB)
S694	1-554-371-31	SWITCH, TACT (DATE)
S695	1-554-371-31	SWITCH, TACT (TIME)
S696	1-554-371-31	SWITCH, TACT (FADER/WIPER)
S697	1-554-371-31	SWITCH, TACT (REC REVIEW)

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A-7060-578-A VF-7 BOARD, COMPLETE
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1-526-926-11 SOCKET ASSY, CRT
*3-662-075-00 COVER, CONTROL
*3-712-665-01 HOLDER, LED

CAPACITOR

Ref.No	Part No.	Description				Remark
C701	1-123-618-00	ELECT	22MF	20%	6.3V	
C702	1-163-081-00	CERAMIC CHIP	0.22MF		25V	
C703	1-131-346-00	TANTALUM	0.68MF	10%	35V	
C704	1-124-224-00	ELECT	47MF	20%	6.3V	
C705	1-163-139-00	CERAMIC CHIP	820PF	10%	50V	
C706	1-163-081-00	CERAMIC CHIP	0.22MF		25V	
C707	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V	
C708	1-123-617-00	ELECT	10MF	20%	16V	
C709	1-163-209-00	CERAMIC CHIP	0.0015MF	5%	50V	
C710	1-163-115-00	CERAMIC CHIP	82PF	5%	50V	
C711	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C712	1-102-108-00	CERAMIC	150PF	10%	50V	
C713	1-124-442-00	ELECT	330MF	20%	6.3V	
C714	1-124-604-00	ELECT	330MF	20%	10V	
C715	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C716	1-163-023-00	CERAMIC CHIP	0.015MF	10%	50V	
C717	1-123-611-00	ELECT	1MF	20%	50V	
C718	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V	
C719	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V	
C720	1-102-112-00	CERAMIC	330PF	10%	50V	
C721	⚠.1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C722	⚠.1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V	
C723	1-123-613-00	ELECT	3.3MF	20%	50V	
C724	1-162-146-00	CERAMIC	0.001MF		1KV	
C725	1-102-038-00	CERAMIC	0.001MF	99%	500V	
C726	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C727	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	

CONNECTOR

Ref.No	Part No.	Description
CN701	*1-564-004-00	PIN, CONNECTOR 5P
CN702	*1-564-001-11	PIN, CONNECTOR 2P
CN703	*1-564-001-11	PIN, CONNECTOR 2P

DIODE

Ref.No	Part No.	Description
D701	8-719-400-20	DIODE MA152WA
D702	8-719-801-48	DIODE 1SS193
D703	8-719-801-45	DIODE 1SS187
D704	8-719-800-24	DIODE TLR147

IC

Ref.No	Part No.	Description
IC701	8-759-403-49	IC AN2510S

COIL

Ref.No	Part No.	Description
L701	⚠.1-408-980-41	MICRO INDUCTOR 68UH
L702	⚠.1-459-683-11	COIL, FERRITE (HLC)
L703	1-407-161-XX	MICRO INDUCTOR 22UH

TRANSISTOR

Ref.No	Part No.	Description
Q701	8-729-100-66	TRANSISTOR 2SC1623
Q702	8-729-162-44	TRANSISTOR 2SB624-BV4
Q703	8-729-100-67	TRANSISTOR 2SC1623-L7

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
Q704	8-729-106-64	TRANSISTOR 2SD1615				

RESISTOR

R701	1-216-306-11	METAL CHIP	3.9	5%	1/10W	
R702	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R703	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R704	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R705	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R706	⚠1-216-017-00	METAL CHIP	47	5%	1/10W	
R707	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R708	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R709	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R710	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R711	1-216-228-00	METAL CHIP	18K	5%	1/8W	
R712	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R713	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R714	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R715	1-216-041-00	METAL CHIP	470	5%	1/10W	
R716	⚠.1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R717	1-216-222-00	METAL CHIP	10K	5%	1/8W	
R718	⚠.1-216-073-00	METAL CHIP	10K	5%	1/10W	
R720	1-216-125-00	METAL CHIP	1.5M	5%	1/10W	
R721	1-216-131-11	METAL CHIP	2.7M	5%	1/10W	
R722	1-216-119-00	METAL CHIP	820K	5%	1/10W	
R723	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R726	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R740	1-216-296-00	METAL CHIP	0	5%	1/8W	
R741	1-216-296-00	METAL CHIP	0	5%	1/8W	
R742	1-216-295-00	METAL CHIP	0	5%	1/10W	
R743	1-216-296-00	METAL CHIP	0	5%	1/8W	
R744	1-216-296-00	METAL CHIP	0	5%	1/8W	
R745	1-216-296-00	METAL CHIP	0	5%	1/8W	
R746	1-216-295-00	METAL CHIP	0	5%	1/10W	

VARIABLE RESISTOR

RV701	1-226-925-00	RES, ADJ, SOLID 220				
RV702	1-226-708-00	RES, ADJ, SOLID 2.2K				
RV703	1-226-711-00	RES, ADJ, SOLID 22K				
RV704	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M				
RV705	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M				

TRANSFORMER

T701	⚠.1-439-394-11	TRANSFORMER ASSY, FLYBACK				

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*A-7060-604-A AF-23 BOARD, COMPLETE
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CAPACITOR

C801	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C802	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C803	1-123-622-00	ELECT	22MF	20%	16V	
C804	1-124-438-00	ELECT	1MF	20%	50V	

Ref.No	Part No.	Description				Remark
C805	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C806	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C807	1-123-821-00	ELECT	47MF	20%	16V	
C808	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C809	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V	
C810	1-123-321-00	ELECT	220MF	20%	16V	
C811	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C812	1-123-321-00	ELECT	220MF	20%	16V	
C813	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C814	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C815	1-123-821-00	ELECT	47MF	20%	16V	
C816	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C817	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C818	1-123-617-00	ELECT	10MF	20%	16V	
C819	1-124-462-00	ELECT	10MF	20%	16V	

CONNECTOR

CN801	*1-564-002-00	PIN, CONNECTOR 3P				
CN802	*1-564-015-00	PIN, CONNECTOR 5P				
CN803	*1-564-001-11	PIN, CONNECTOR 2P				
CN805	*1-564-001-11	PIN, CONNECTOR 2P				
CN807	*1-564-008-00	PIN, CONNECTOR 9P				

IC

IC801						
IC802						
IC803						
IC804	8-759-193-58	IC UPC358G				

COIL

L801	1-407-718-00	MICRO INDUCTOR 1.2MMH				

IC LINK

PS801	⚠.1-532-605-11	LINK, IC (ICP-N10)				

TRANSISTOR

Q801	8-729-100-66	TRANSISTOR 2SC1623				
Q802	8-729-901-15	TRANSISTOR DTA144EK				
Q803	8-729-100-66	TRANSISTOR 2SC1623				
Q804	8-729-100-66	TRANSISTOR 2SC1623				
Q805	8-729-199-92	TRANSISTOR 2SD999				
Q806	8-729-104-24	TRANSISTOR 2SB804				
Q807	8-729-199-92	TRANSISTOR 2SD999				
Q808	8-729-104-24	TRANSISTOR 2SB804				
Q809	8-729-100-66	TRANSISTOR 2SC1623				
Q810	8-729-100-66	TRANSISTOR 2SC1623				
Q811	8-729-901-15	TRANSISTOR DTA144EK				

RESISTOR

R801	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R802	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R803	1-216-081-00	METAL CHIP	22K	5%	1/10W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

AF-23 FC-10

Ref.No	Part No.	Description	Remark
R804	1-216-041-00	METAL CHIP 470 5% 1/10W	
R805	1-216-295-00	METAL CHIP 0 5% 1/10W	
R806	1-216-096-00	METAL CHIP 91K 5% 1/10W	
R807	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R808	1-216-082-00	METAL CHIP 24K 5% 1/10W	
R809	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R810	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R811	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R812	1-216-041-00	METAL CHIP 470 5% 1/10W	
R813	1-216-080-00	METAL CHIP 20K 5% 1/10W	
R814	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R815	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R816	1-216-304-11	METAL CHIP 3.3 5% 1/10W	
R817	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R818	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R819	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R820	1-216-058-00	METAL CHIP 2.4K 5% 1/10W	
R821	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R822	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R823	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R824	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R825	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R826	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R827	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R828	1-216-158-00	METAL CHIP 22 5% 1/8W	
R829	1-216-158-00	METAL CHIP 22 5% 1/8W	
R830	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R831	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R832	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R833	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R834	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R835	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R836	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R837	1-216-058-00	METAL CHIP 2.4K 5% 1/10W	
R838	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R839	1-216-097-00	METAL CHIP 100K 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV801	1-230-874-11	RES, ADJ, METAL GLAZE 100K
RV802	1-230-870-21	RES, ADJ, METAL GLAZE 10K
RV803	1-237-411-11	RES, ADJ, METAL GLAZE 1K

CRYSTAL

Ref.No	Part No.	Description
X801	1-567-470-11	VIBRATOR, CERAMIC (6MHz)

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*A-7060-659-A FC-10 BOARD, COMPLETE
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3-712-106-01 REINFORCEMENT (333)

CAPACITOR

Ref.No	Part No.	Description			Remark
C601	1-135-101-21	TANTAL. CHIP 22MF	20%	6.3V	
C602	1-163-105-00	CERAMIC CHIP 33PF	5%	50V	
C603	1-135-101-21	TANTAL. CHIP 22MF	20%	6.3V	
C604	1-163-093-00	CERAMIC CHIP 10PF	5%	50V	
C605	1-162-638-11	CERAMIC CHIP 1MF		16V	
C606	1-135-088-21	TANTAL. CHIP 2.2MF	20%	20V	
C607	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V	
C608	1-162-638-11	CERAMIC CHIP 1MF		16V	
C609	1-162-638-11	CERAMIC CHIP 1MF		16V	
C610	1-135-101-21	TANTAL. CHIP 22MF	20%	6.3V	
C611	1-135-088-21	TANTAL. CHIP 2.2MF	20%	20V	
C612	1-135-070-00	TANTAL. CHIP 0.1MF	20%	35V	
C613	1-135-092-21	TANTAL. CHIP 3.3MF	20%	16V	
C614	1-162-638-11	CERAMIC CHIP 1MF		16V	
C615	1-163-263-00	CERAMIC CHIP 330PF	5%	50V	
C616	1-163-263-00	CERAMIC CHIP 330PF	5%	50V	
C617	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V	
C618	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V	
C619	1-163-119-00	CERAMIC CHIP 120PF	5%	50V	

CONNECTOR

Ref.No	Part No.	Description
CN601	*1-564-020-00	PIN, CONNECTOR 10P

TRIMMER

Ref.No	Part No.	Description
CT601	1-141-331-11	CAP, VAR, TRIMMER (CHIP)(30PF)

DIODE

Ref.No	Part No.	Description
D601	8-719-100-05	DIODE 1S2837
D602	8-719-100-05	DIODE 1S2837
D603	8-719-100-05	DIODE 1S2837
D604	8-719-100-05	DIODE 1S2837
D605	8-719-801-48	DIODE 1SS193

IC

Ref.No	Part No.	Description
IC601	8-759-107-94	IC UPD7508G-756-00
IC604	8-759-100-97	IC UPC339G2
IC605	8-759-100-95	IC UPC324G2
IC606	8-759-106-40	IC UPD4538BG

TRANSISTOR

Ref.No	Part No.	Description
Q601	8-729-900-98	TRANSISTOR DTC143TK
Q602	8-729-900-98	TRANSISTOR DTC143TK
Q603	8-729-901-01	TRANSISTOR DTC144EK
Q604	8-729-901-01	TRANSISTOR DTC144EK
Q605	8-729-100-76	TRANSISTOR 2SA812
Q606	8-729-100-76	TRANSISTOR 2SA812
Q607	8-729-109-44	TRANSISTOR 2SK-94
Q608	8-729-100-76	TRANSISTOR 2SA812
Q609	8-729-901-03	TRANSISTOR DTC144WK
Q611	8-729-100-76	TRANSISTOR 2SA812
Q612	8-729-900-98	TRANSISTOR DTC143TK

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
Q614	8-729-100-66	TRANSISTOR 2SC1623	
Q615	8-729-100-66	TRANSISTOR 2SC1623	
Q616	8-729-100-66	TRANSISTOR 2SC1623	
Q617	8-729-100-66	TRANSISTOR 2SC1623	
Q618	8-729-100-66	TRANSISTOR 2SC1623	
Q619	8-729-100-66	TRANSISTOR 2SC1623	
Q620	8-729-100-76	TRANSISTOR 2SA812	
Q621	8-729-100-76	TRANSISTOR 2SA812	
Q622	8-729-900-99	TRANSISTOR DTA144WK	
Q623	8-729-901-03	TRANSISTOR DTC144WK	

RESISTOR

Ref.No	Part No.	Description				Remark
R601	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R602	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R603	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R604	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R605	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R606	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R607	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R608	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R609	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R610	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R611	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R612	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R613	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R614	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R615	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R616	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R617	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R618	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R619	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R620	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R621	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R623	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R624	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R625	1-216-129-00	METAL CHIP	2.2M	5%	1/10W	
R626	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R627	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R628	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R629	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R630	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R632	1-216-295-00	METAL CHIP	0	5%	1/10W	
R634	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R635	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R636	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R637	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R638	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R639	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R642	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R643	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R644	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R645	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R646	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R647	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R648	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R649	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R650	1-216-098-00	METAL CHIP	110K	5%	1/10W	
R651	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R652	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R653	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R654	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R655	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R656	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R657	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R658	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R659	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R660	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R661	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R662	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R663	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R664	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R665	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV601	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
RV602	1-230-874-11	RES, ADJ, METAL GLAZE 100K	

SWITCH

Ref.No	Part No.	Description	Remark
S601	1-554-371-31	SWITCH, TACT (NEXT)	
S602	1-554-371-31	SWITCH, TACT (-)	
S603	1-554-371-31	SWITCH, TACT (+)	
S604	1-554-371-31	SWITCH, TACT (CLEAR)	
S605	1-554-371-31	SWITCH, TACT (INTERVAL REC)	

CRYSTAL

Ref.No	Part No.	Description	Remark
X601	1-527-997-00	VIBRATOR, CRYSTAL	

****

*A-7070-024-A LD-1 BOARD, COMPLETE

****

DIODE

Ref.No	Part No.	Description	Remark
D901	8-719-928-54	DIODE GL-450S	

****

MS-4 BOARD

****

CAPACITOR

Ref.No	Part No.	Description	Remark
C901	1-163-038-00	CERAMIC CHIP 0.1MF	25V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN905	1-564-671-00	PIN, CONNECTOR (HOOK TYPE)	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
		LS-9 BOARD **********	
		CONNECTOR	
CN904	*1-564-671-11	PIN, CONNECTOR (HOOK TYPE)	
************	************	*************************	*********
	*1-620-158-11	EP-8 BOARD ***********	
		DIODE	
D981	8-719-911-19	DIODE 1SS119	
		JACK	
J981	1-507-921-00	JACK (EARPHONE)	
		COIL	
L981	1-408-958-21	MICRO INDUCTOR 1UH	
L982	1-408-958-21	MICRO INDUCTOR 1UH	
************	************	*************************	*********
	*1-620-145-11	AS-13 BOARD ************	
		BALANCE SENSOR	
SB701	1-807-594-11	SENSOR, WB (WHITE BALANCE)	
************	************	*************************	*********
	*1-620-155-11	RJ-2 BOARD ***********	
		CAPACITOR	
C931	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C932	1-163-021-00	CERAMIC CHIP 0.01MF	50V
		CONNECTOR	
CN931	1-562-589-11	SOCKET, DIN (SMALL TYPE) 5P	
		DIODE	
D931	8-719-106-71	DIODE RD12M-B2	
D932	8-719-106-71	DIODE RD12M-B2	
D933	8-719-106-71	DIODE RD12M-B2	
************	************	*************************	*********
	*1-620-160-11	ZS-2 BOARD ***********	
		CONNECTOR	
CN951	1-564-002-00	PIN, CONNECTOR 3P	
CN952	*1-564-003-00	PIN, CONNECTOR 4P	
CN953	*1-564-003-00	PIN, CONNECTOR 4P	
CN954	*1-564-002-00	PIN, CONNECTOR 3P	

Ref.No	Part No.	Description	Remark
	*1-620-159-11	LI-1 BOARD ***********	
J961	1-550-104-21	BATTERY HOLDER	
************	************	*************************	*********
	*1-620-279-11	GS-2 BOARD ***********	
		SWITCH	
S921	1-570-689-11	SWITCH, KEY BOARD (START/STOP)	
************	************	*************************	*********
		MISCELLANEOUS *************	
	A-7090-029-A	M-SW ASSY	
	X-3712-403-1	L-SW ASSY	
	1-535-535-11	TERMINAL, SHAFT GROUND	
	1-547-213-11	LENS, ZOOM (VCL-1206YG)	
	1-570-785-11	SWITCH, PUSH (ZOOM)	
	1-619-921-11	PC BOARD, FR-19	
	1-807-238-21	SENSOR, DEW CONDENSATION	
	8-750-010-20	IU018-K-AA (CCD IMAGER BLOCK)	
	8-814-225-90	MICROPHONE C-2012	
DR901	1-464-704-11	CONVERTER UNIT, DC-DC (S)	
L901 ⚠	1-451-296-11	DEFLECTION YOKE (BLACK & WHITE)	
M901	A-7040-031-A	MOTOR ASSY, L (LOADING)	
M902	8-835-196-01	MOTOR, DC BHF-2802A (CAPSTAN)	
M903	8-835-110-01	MOTOR, DC (DNR-5301A) (CONTROL)	
PM901 ⚠	1-454-377-21	SOLENOID, PLUNGER (BRAKE)	
S901	1-553-226-00	SWITCH, LEAF (CASSETTE LOCK)	
S902	1-554-942-11	SWITCH, PUSH (REC OG)	
V901 ⚠	1-546-061-11	CATHODE-RAY TUBE, B/W	
************	************	*************************	*********
		ACCESSORIES AND PACKING MATERIALS *******************************	
	3-765-608-21	MANUAL, INSTRUCTION	
	*3-696-079-01	BAG, PROTECTION	
	3-712-595-11	BELT, SHOULDER	
	*3-712-596-01	CUSHION (UPPER)	
	*3-712-597-01	CUSHION (LOWER)	
	*3-712-635-01	INDIVIDUAL CARTON	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

SECTION 7
CAMERA ADJUSTMENTS

During the adjustment, see the parts arrangement diagram relevant to the adjustment on page 278.

Pre-adjustment preparations (Camera block)

7-1. LIST OF SERVICING JIGS

- Oscilloscope
- AC adaptor (T/T unit)
- Adjusting screwdriver
- L wrench
- Color monitor
- Vectorscope

Ref No.	Part name	Part No.	Use	Q'ty
J-1	Filter (W14)	J-6080-830-A	R gain, B gain adjustment	1
	Filter (C22)	J-6080-829-A	R gain, B gain adjustment	1
	Filter (Daylight)	J-6080-058-A	Outdoors white balance adjustment	1
J-2	ND filter 0.4	J-6080-806-A	IRIS setting adjustment, Max. gain adjustment, LLA adjustment	1
	ND filter 0.1	J-6080-807-A	IRIS setting adjustment, LLA adjustment	2
	ND filter 1.0	J-6080-808-A	LLA adjustment	1
	ND filter 0.9	J-6080-833-A	Max. gain adjustment, LLA adjustment	2
J-3	Pattern box PTB-100	J-6020-490-A		1
J-4	Pattern box color chart	J-6020-250-A		1
J-5	Extension cord (6P)	J-6080-861-A		1
	Extension cord (10P)	J-6080-862-A		1
	Extension cord (3P)	J-6080-863-A		1
	Extension cord (3P, shield wire is used)	J-6080-864-A		1

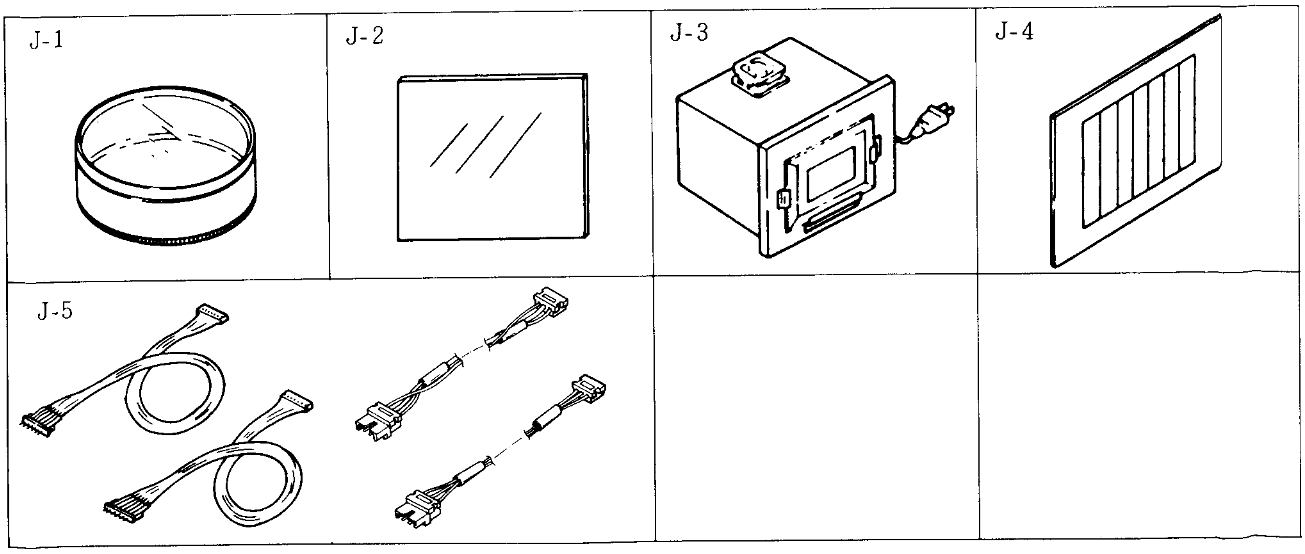
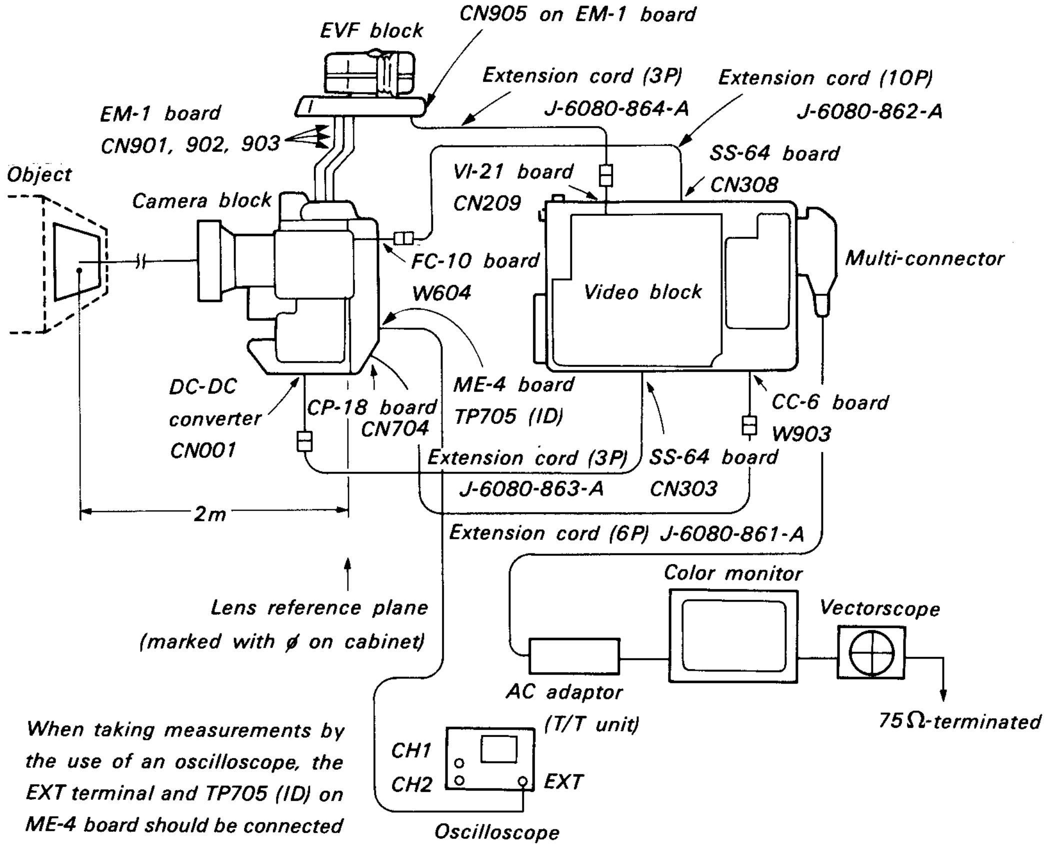


Fig. 7-1.


EVF block
CN905 on EM-1 board
Extension cord (3P)
J-6080-864-A
Extension cord (10P)
J-6080-862-A
EM-1 board
CN901, 902, 903
SS-64 board
CN308
Object
VI-21 board
CN209
Camera block
FC-10 board
W604
Video block
Multi-connector
DC-DC
converter
CN001
CP-18 board
CN704
ME-4 board
TP705 (ID)
CC-6 board
W903
Extension cord (3P)
J-6080-863-A
SS-64 board
CN303
2m
Extension cord (6P) J-6080-861-A
Color monitor
Lens reference plane
(marked with ⌀ on cabinet)
Vectorscope
AC adaptor
(T/T unit)
75Ω-terminated
CH1
CH2
EXT
Oscilloscope

When taking measurements by the use of an oscilloscope, the EXT terminal and TP705 (ID) on ME-4 board should be connected together for synchronization, unless otherwise specified.

Fig. 7-2.

7-2. PREPARATIONS

Note: For details of the cabinet and individual boards removal procedure, refer to Section 2. DISASSEMBLY.

1) Remove cabinet (L) and cabinet (R).
   Before removing cabinet (R), disconnect CN951 and CN952 on ZS-2 board of grip block, and CN601 on FC-10 board of camera block.
2) Separate camera block from video block.
   1. Disconnect CN403, CN404 and CN406 on AU-24 board of video block.
   2. Disconnect CN704 on CP-18 board of camera block, and connect extension cord (6P).
   3. Disconnect CN303 on SS-64 board of video block, and connect extension cord (3P).
   4. Disconnect CN308 on SS-64 board of video block, and connect extension cord (10P).
   5. Disconnect CN905 on EM-1 board of EVF (electronic view finder) block, and connect extension cord (3P, shield wire is used). (This connection is required only when adjusting EVF block.)
3) When EVF (electronic view finder) block is unnecessary, remove it off the camera block. The EVF block is required for the following adjustments or checks:
   1. Camera DC-DC converter voltage check
   2. LLA adjustment
   3. EVF block adjustment
   Before removing EVF block off the camera block, first disconnect CN901, CN902 and CN903 on EM-1 board and chassis ground line of camera block.

7-3. CAUTION

1) Switch settings
Unless otherwise specified, employ the following switch and control settings in making adjustments:
   1. FOCUS switch (S671 on CG-1 board)... AUTO
   2. WHITE BALANCE switch (S672 on CG-1 board)... INDOOR (☼)
   3. SENS switch (S673 on CG-1 board)... NORMAL
   4. IRIS control (RV671 on CG-1 board)... Center click position (AUTO)

2) Adjusting order
As a rule, observe the order specified.

3) Objects
   1. Color bar chart (Standard picture frame)
   When making adjustments by the use of a color bar chart, first adjust image frame as shown in Fig. 7-3 (standard picture frame).

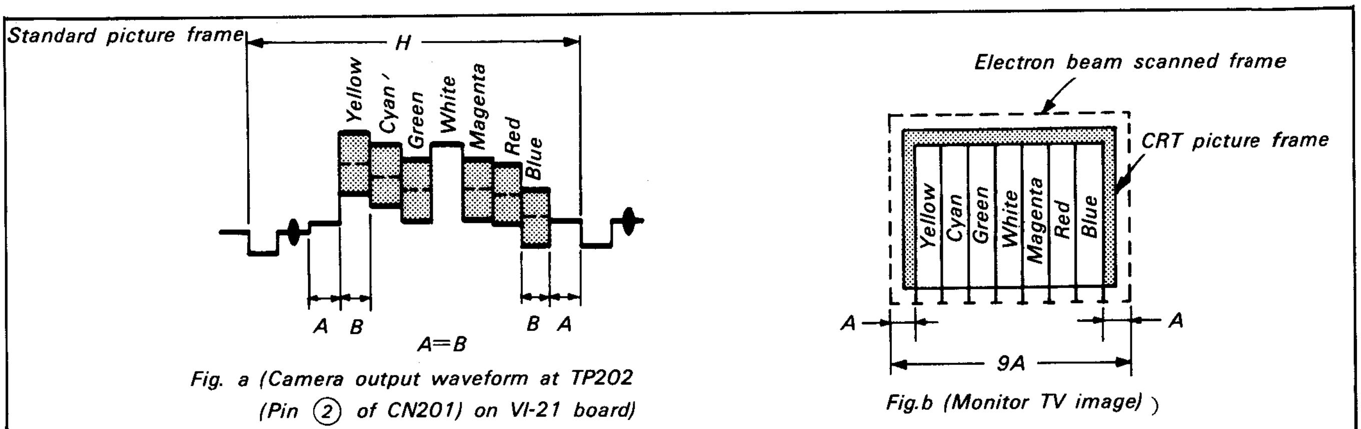

Standard picture frame
H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
B
B
A
A=B
Electron beam scanned frame
CRT picture frame
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
A
9A

Fig. a (Camera output waveform at TP202 (Pin ② of CN201) on VI-21 board)

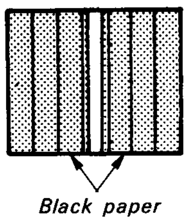
Fig.b (Monitor TV image)

By operating the camera zooming and orientation, have the Fig.a output waveform output and the Fig.b monitor TV image displayed.

Fig. 7-3.

   2. Totally white pattern
   Remove color bar chart off pattern box, and set zoom lever at its extreme TELE position (72 mm).
   3. High luminance pattern
   Prepare a high luminance pattern as shown in Fig. 7-4 and adjust picture frame as shown in Fig. 7-5.
   4. Siemens star and sign chart
   Orient camera to have the pattern center coincide with the monitor screen center on a monitor TV screen.

High luminance pattern


Black paper

Cover a color bar chart with black paper, except half the width of its white stripe. Then, shoot the chart in this state.

Fig. 7-4.

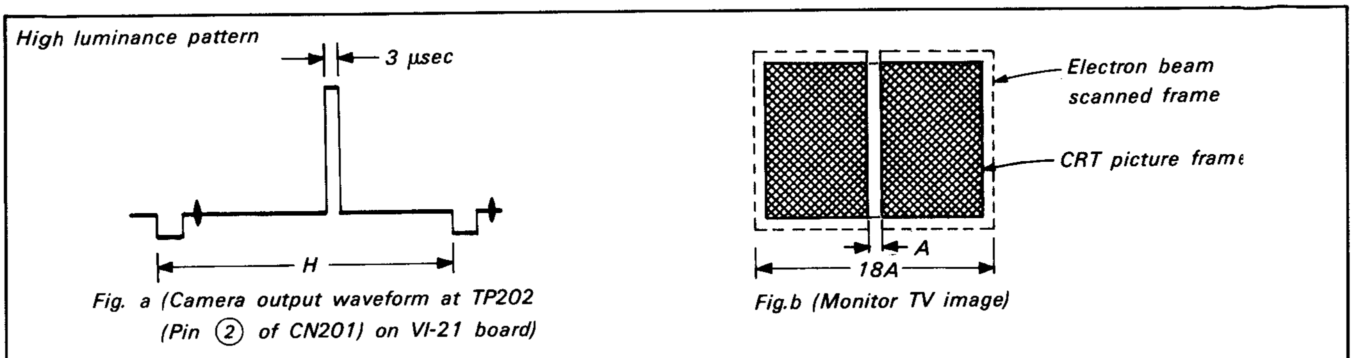

High luminance pattern
3 μsec
H
A
18A
Electron beam scanned frame
CRT picture frame

Fig. a (Camera output waveform at TP202 (Pin ② of CN201) on VI-21 board)

Fig.b (Monitor TV image)

By operating the camera zooming and orientation, have the Fig.a output waveform output and the Fig.b monitor TV image displayed.

Fig. 7-5.

7-4. CAMERA SYSTEM ADJUSTMENT

7-4-1. Flange Back Adjustment

Object	Siemens star (At 2m directly in front of lens reference plane ("ϕ" marked))
Measurement Point	Check with a monitor TV
Measuring Instrument	
Adjusting Element	Flange back adjusting pin
Tools	L wrench (1.5 mm) and flat blade (−) screwdriver

Adjusting method:

1) Set FOCUS switch (S671 on CG-1 board) at its MANUAL position.
2) Set IRIS control (RV671 on CG-1 board) at its OPEN position.
3) Position a Siemens star 2m directly in front of lens reference plane (See Fig. 7-6).
4) Orient camera block to have the center of the Siemens star imaged on the monitor TV screen coincide with the monitor screen center.
5) Check to assure the smooth motion of zoom lever to both its extreme WIDE position (12 mm) and TELE position (72 mm), and then set it at the extreme WIDE position. (In this process, also check the monitor image to assure its due zooming operation.)
6) Set the lens focusing mark at the center of "2".

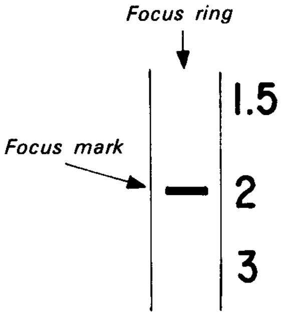

Focus ring
Focus mark
1.5
2
3

Fig. 7-6.

7) Loosen hexagonal socket head setscrew ❶ with an L wrench. (See Fig. 7-9)
8) By turning flange back adjusting Pin ❷ while watching the monitor screen, attain the highest definition of a wedge at the Siemens star center on the screen. (Turn it a few times to the right and left, to assure the definition to be the highest.)

   Note: Do not turn the adjusting pin excessively in either direction at a time.
9) While holding flange back adjusting Pin ❷ down for any further turns, retighten hexagonal socket head setscrew ❶.
10) With zoom lever fixed at its WIDE end, turn focusing ring, and set it at a position that provides the highest definition image of the wedge. Check to assure the focusing mark position thus attained to be within the Fig. 7-7 range.

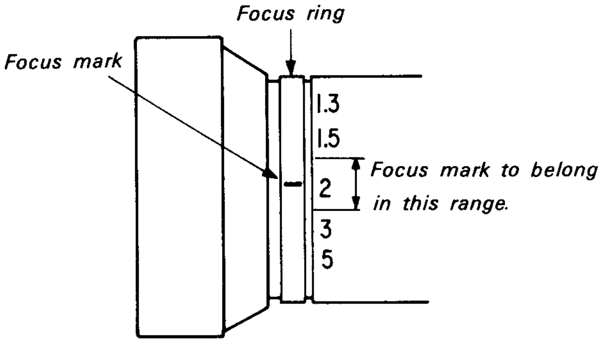

Focus ring
Focus mark
1.3
1.5
2
3
5
Focus mark to belong in this range.

Fig. 7-7.

11) Turn zoom lever fully to its extreme TELE position.
12) By turning focusing ring, check to assure the position that provides the highest definition view of the wedge to be within the Fig. 7-8 range.

    If this specification fails to meet, repeat steps 5) to 12).

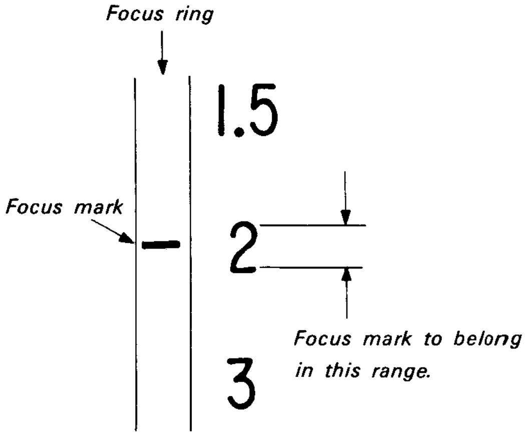

Focus ring
1.5
Focus mark
2
Focus mark to belong in this range.
3

Fig. 7-8.

13) Restore a center click position (AUTO position) of the IRIS control.

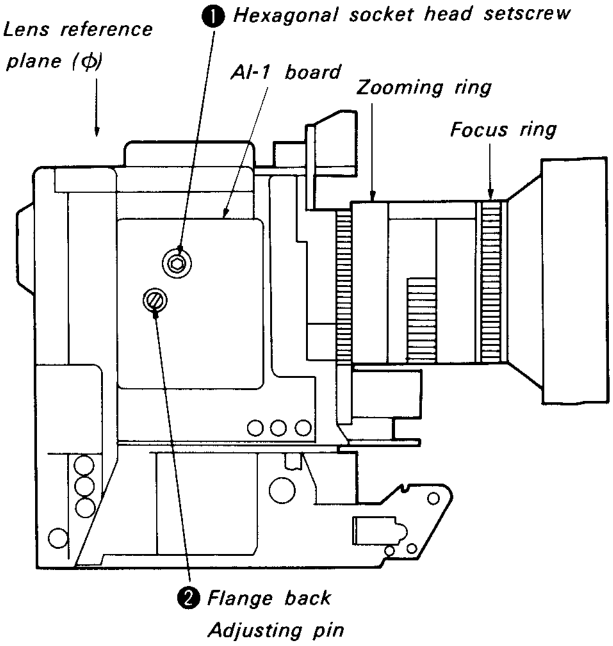

Lens reference plane (ϕ)
❶ Hexagonal socket head setscrew
AI-1 board
Zooming ring
Focus ring
❷ Flange back Adjusting pin

Fig. 7-9.

7-4-2. Camera DC-DC Converter Voltage Check

Measuring Instrument	Digital voltmeter
CAM 5V check	
Specified Value	5.0±0.2Vdc
F5V check	
Specified Value	5.05±0.2Vdc
8.5V check	
Specified Value	8.55±0.2Vdc
12V check	
Specified Value	12.0±0.Vdc
20V check	
Specified Value	20.0±0.5Vdc
EVF 5V check	
Specified Value	5.0±0.2Vdc

Note: Run the above checks with EVF block connected thereon.

Checking method:

1) Each individual power supply voltage should be at its specified level.

7-4-3. Clock Oscillating Frequency Adjustment (CP-18 Board)

Measurement Point	Pin ㊱ (CL) on DT-61 board
Measuring Instrument	Frequency counter
Adjusting Element	CT721
Specified Value	14318181±72 Hz

Adjusting method:

1) Adjust to 14318181±72 Hz with CT721.

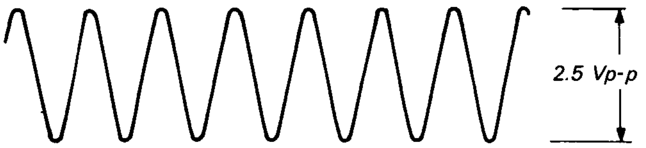


Fig. 7-10.

7-4-4. HALL Setting Adjustment (AI-1 Board)

Object	Color bar chart standard picture frame
Measurement Point	TP781 (HALL)
Measuring Instrument	Oscilloscope (DC range) or digital voltmeter
Adjusting Element	H GAIN: RV781 H OFFSET: RV782
Specified Value	IRIS knob at OPEN position: 4.0±0.1Vdc IRIS knob at CLOSED position: 3.0±0.1Vdc

Adjusting method:

1) Make the voltage variable range of TP781 to 1V by turning the IRIS control (RV671 on CG-1 board) with RV781.
2) Make the voltage of TP781 to 4.0±0.1Vdc when the IRIS control is engaged into the OPEN position (↶ turn fully counterclockwise) with RV782.
3) Check to assure that the voltage of TP781 is 3.0±0.1Vdc when IRIS control is turned to its CLOSEd position (↷ extreme clockwise position).
   If the above specification fails to meet, repeat step 1) and 2).
4) Set IRIS control at its center click position (AUTO position).

7-4-5. IRIS Setting Adjustment (AT-5, ME-4 Boards)

Object	Color bar chart standard picture frame
Filters	ND filters: 0.4 and 0.1
Measurement Point	TP701 (CCD OUT) on ME-4 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV885 (IRIS SET) on AT-5 board
Specified Value	250±5 mV

Adjusting method:

1) By turning RV855 on AT-5 board, adjust for a 250±5 mV signal level with no ND filter mounted on. (See Fig. 7-11) (Be sure to conclude this adjustment by turning RV855 in a direction to lower the signal level.)
2) Mount ND filters of 0.5 (0.4+0.1) on in front of lens, and check to assure a smooth variation of the signal level.
3) Remove the ND filters, and check to assure the signal level is 250±5 mV.
4) If the above specification fails to meet, repeat steps 1) to 3).

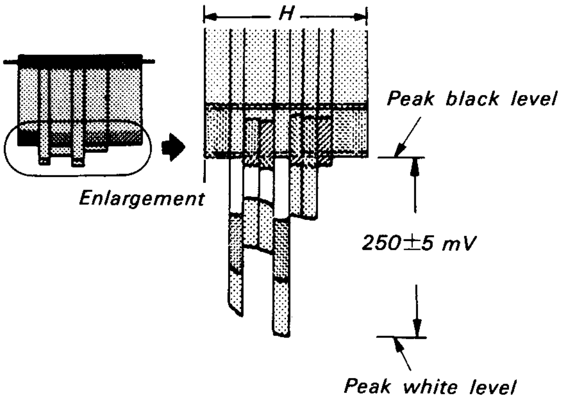

H
Peak black level
Enlargement
250±5 mV
Peak white level

Fig. 7-11.

7-4-6. AGC Setting Adjustment (AT-5, ME-4 Boards)

Object	Color bar chart standard picture frame
Measurement Point	TP703 (G DET) on ME-4 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV851 (AGC SET) on AT-5 board
Specified Value	250±5 mV

Note: Set the three following RVs on the ME-4 board at their mechanical centers in advance:

1. RV703 (R GAIN)
2. RV702 (B GAIN)
3. RV701 (MAX GAIN)

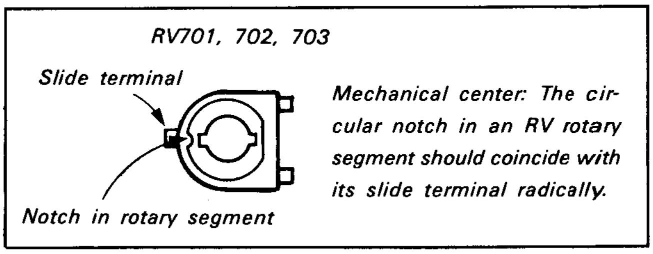

RV701, 702, 703
Slide terminal
Mechanical center: The circular notch in an RV rotary segment should coincide with its slide terminal radically.
Notch in rotary segment

Fig. 7-12.

Adjusting method:

1) By turning RV851 on AT-5 board, adjust for a 250±5 mV signal level.

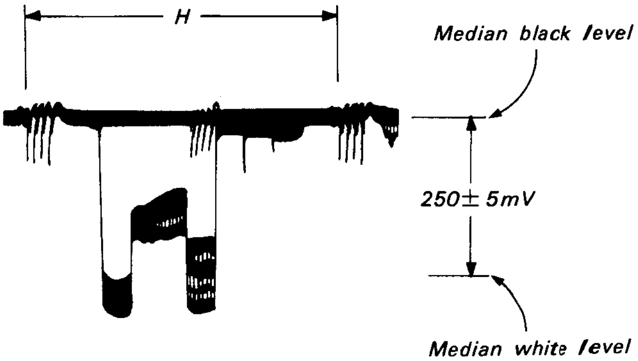

H
Median black level
250± 5mV
Median white level

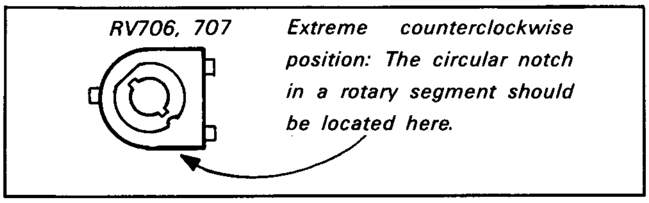
Fig. 7-13.

7-4-7. G-pedestal Adjustment (1) (ME-4 board)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	TP706 (G-γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV708 (G-PEDESTAL)
Specified Value	55±5 mV

Note: Turn the two following RVs to the extreme counterclockwise (↶) positions in advance:

1. RV706 (γ)
2. RV707 (WHITE CLIP (1))



Extreme counterclockwise position: The circular notch in a rotary segment should be located here.

Fig. 7-14.

Adjusting method:

1) By turning RV708, adjust for a 55±5 mV pedestal level.

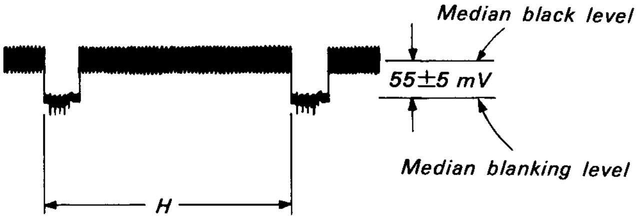


Fig. 7-15.

7-4-8. G-gamma Adjustment (ME-4 Board)

Object	Color bar chart standard picture frame
Measurement Point	TP706 (G-γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV706 (γ)
Specified Value	440±5 mV

Note: Turn RV707 (WHITE CLIP (1)) to its extreme counterclockwise (↶) position in advance. (See Fig. 7-14)

Adjusting method:

1) By turning RV706, adjust for a 440±5 mV level.

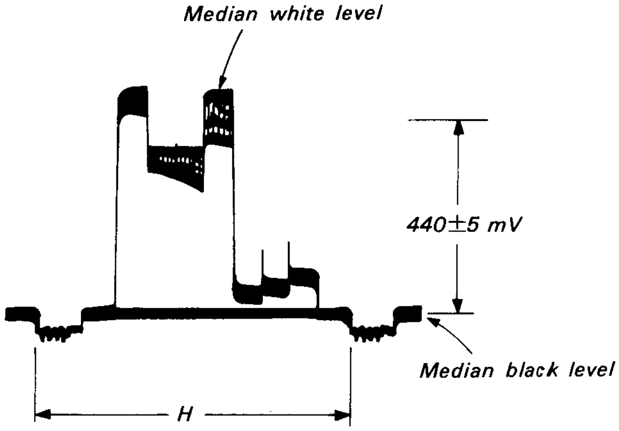


Fig. 7-16.

7-4-9. White Clip Adjustment (1) (ME-4 Board)

Object	High luminance pattern
Measurement Point	TP706 (G-γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV707 (WHITE CLIP (1))
Specified Value	515±15 mV

Adjusting method:

1) By turning RV707, adjust for a 515±15 mV white peak level.

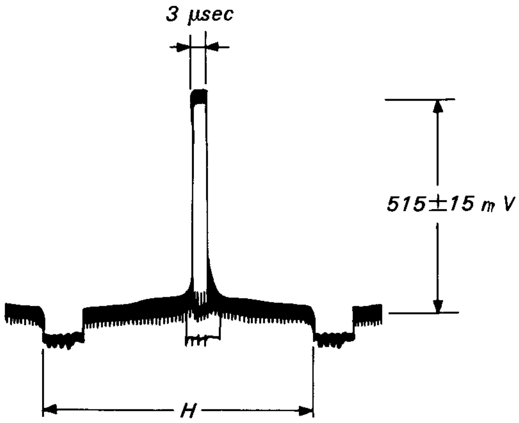


Fig. 7-17.

7-4-10. G-pedestal Adjustment (2) (ME-4 Board)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	TP706 (G-γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV708 (G-PEDESTAL)
Specified Value	35±5 mV

Adjusting method:

1) By turning RV708, adjust for a 35±5 mVp-p level.

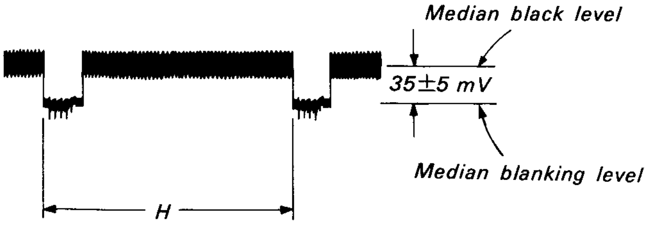


Fig. 7-18.

7-4-11. G-gamma Level Checks (ME-4 Board)

Object	Color bar chart standard picture frame
Measurement Point	TP706 (G-γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV707 (WHITE CLIP (1))
Specified Value	400±20 mV

Checking method:

1) Check to assure the white level at 400±20 mV.
2) If the above specification fails to meet, turn RV707 to meet it.

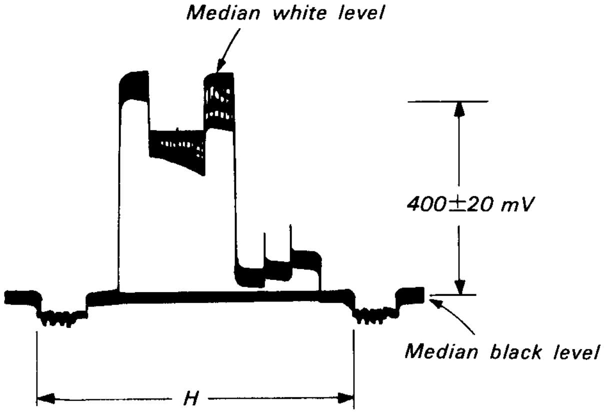


Fig. 7-19.

7-4-12. RB Offset Adjustment (ME-4 Board)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	CH1: TP707 (RB-γ) CH2: TP706 (G-γ) EXT TRIGER: TP705 (ID)
Measuring Instrument	Oscilloscope Vertical mode: ADD CH2 polarity: INVERT
Adjusting Element	RV704 (R.OFF SET), RV705 (B.OFF SET)
Specified Value	The blanking level should be centrally situated within the noise width.

Adjusting method:

1) Turn IRIS control (RV671 on CG-1 board) to its extreme clockwise (↻) position for "CLOSE".
2) By turning RV704 and RV705, adjust for a blanking level centrally situated within the noise width. (No level difference at every 1H should be exhibited.)
3) Restore a center click position of the IRIS control.

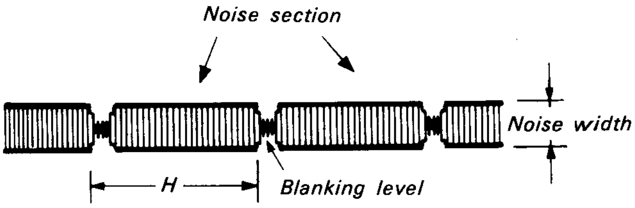


Fig. 7-20.

7-4-13. R-gain/B-gain Adjustments (ME-4 Board)

Object	Totally white pattern
Filter	Color temperature converting filters: C22 (For R-gain adjustment) W14 (For B-gain adjustment)
Measurement Point	CH1: TP707 (RB-γ) CH2: TP706 (G-γ) EXT TRIGER: TP705 (ID)
Measuring Instrument	Oscilloscope Vertical mode: ADD CH2 polarity: INVERT
Adjusting Element	R-gain adjustment: RV703 B-gain adjustment: RV702
Specified Value	R-gain adjustment: The level differences of the R-G signal from the blanking level should be +10 mV max. and 0 mV min. B-gain adjustment: The level differences of the B-G signal from the blanking level should be +10 mV max. and 0 mV min.

Note: Turn the two following RVs to the extreme counterclockwise (↶) positions in advance to maximize the signal level of TP707:

1. RV710 (INDOOR R)
2. RV711 (INDOOR B)

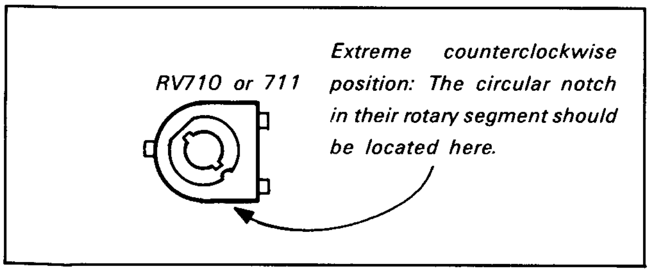

RV710 or 711
Extreme counterclockwise position: The circular notch in their rotary segment should be located here.

Fig. 7-21.

Adjusting method:

1) Mount color temperature compensating filter C22 on lens.
2) Set the oscilloscope trigger slope at "+".
3) By turning RV703, adjust for a +10 mV max. and 0 mV min. the level difference of the R-G signal against the blanking level.
4) Exchange the color temperature compensating filter to W14.
5) Set the oscilloscope trigger slope at "−".
6) By turning RV702, adjust for a +10 mV max. and 0 mV min. the level difference of the B-G signal against the blanking level.

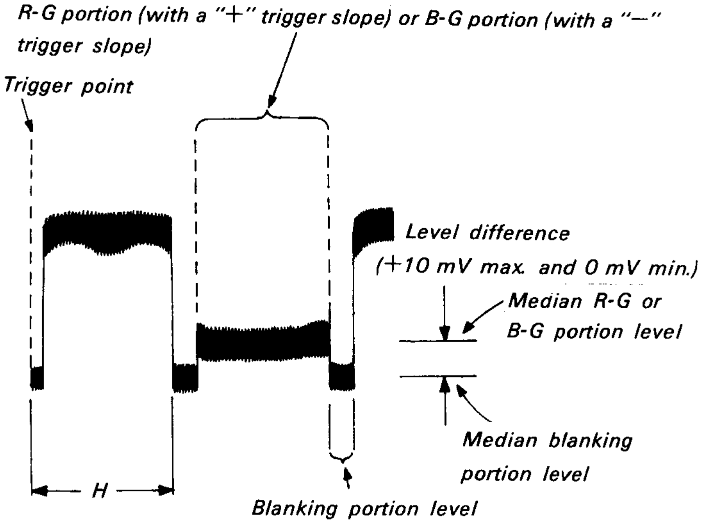

R-G portion (with a "+" trigger slope) or B-G portion (with a "−" trigger slope)
Trigger point
Level difference (+10 mV max. and 0 mV min.)
Median R-G or B-G portion level
Median blanking portion level
Blanking portion level
H

Fig. 7-22.

7-4-14. Indoor White Balance Adjustment (1) (ME-4 Board)

Object	Color bar chart standard picture frame
Measurement Point	CH1: TP707 (RB-γ) CH2: TP706 (G-γ) EXT TRIGER: TP705 (ID)
Measuring Instrument	Oscilloscope Vertical mode: ADD CH2 polarity: INVERT
Adjusting Element	RV710 (INDOOR R) RV711 (INDOOR B)
Specified Value	The level difference between the white and black levels should be less than 5 mV.

Adjusting method:

1) By turning RV710, equalize the R-G signal white level with the black level.
2) By turning RV711, equalize the B-G signal white level with the black level.

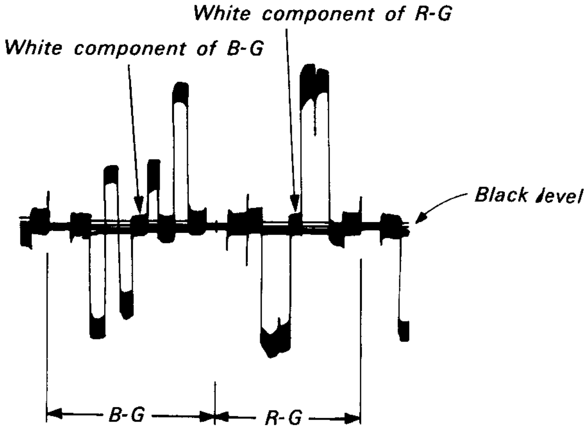
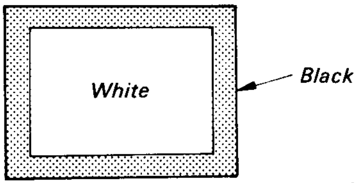

White component of R-G
White component of B-G
Black level
B-G
R-G

Fig. 7-23.

7-4-15. Matrix Gain Adjustments (ME-4 Board)

Object	White pattern (Should insert a black frame. See Fig. 7-24)
Measuring Instrument	Oscilloscope Vertical mode: ADD CH2 polarity: INVERT
G1 gain adjustment	
Measurement Point	CH1: TP708 (G0) on ME-14 board CH2: TP709 (G1) on ME-14 board
Adjusting Element	RV713 (G1)
Specified Value	No level difference should be exhibited by the white and black signals.
G2 gain adjustment	
Measurement Point	CH1: TP708 (G0) on ME-14 board CH2: TP710 (G2) on ME-14 board
Adjusting Element	RV715 (G2)
Specified Value	No level difference should be exhibited by the white and black signals.
RB1 gain adjustment	
Measurement Point	CH1: TP711 (RB0) on ME-14 board CH2: TP712 (RB1) on ME-14 board
Adjusting Element	RV714 (RB1)
Specified Value	No level difference should be exhibited by the white and black signals.
RB2 gain adjustment	
Measurement Point	CH1: TP711 (RB0) on ME-14 board CH2: TP713 (RB2) on ME-14 board
Adjusting Element	RV716 (RB2)
Specified Value	No level difference should be exhibited by the white and black signals.



Take a photograph of a pattern box of the standard picture frame.

Fig. 7-24.

Adjusting method:

1) By turning the respective RVs, eliminate all level differences between the white and black signals.

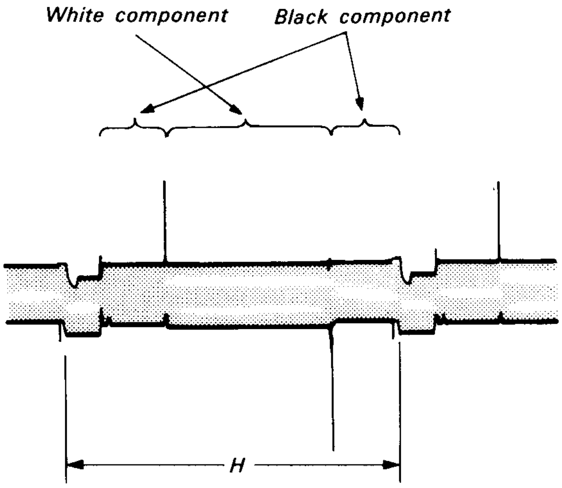


Fig. 7-25.

7-4-16. MPX Adjustment (ME-4 Board)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	CH1 (X): TP715 (B-Y) CH2 (Y): TP714 (R-Y)
Measuring Instrument	Oscilloscope (X-Y mode)
Adjusting Element	RV717
Specified Value	Only one black luminance spot of a minimized size should be exhibited.

Note: 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.

2) For the elimination of high frequency noises, insert a resistor (approximately 10 kΩ when employing a 10 : 1 probe or approximately 1 kΩ when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

1) By turning RV717, bring black luminance spots into one.

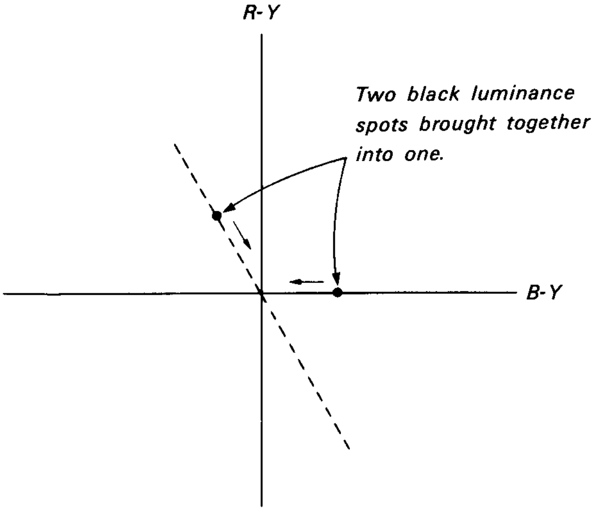


Fig. 7-26.

7-4-17. R-Y/B-Y Offset Adjustment (ME-4 board)

Object	Totally black (with lens blocked with a black cap)
Measuring Instrument	Oscilloscope
R-Y offset adjustment	
Measurement Point	TP714 (R-Y)
Adjusting Element	RV718 (R-Y OFFSET)
Specified Value	The median black signal level should be equal to the median blanking level.
B-Y offset adjustment	
Measurement Point	TP715 (B-Y)
Adjusting Element	RV719 (B-Y OFFSET)
Specified Value	The median black signal level should be equal to the median blanking level.

Note: 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.

2) For the elimination of high frequency noises, insert a resistor (approximately 10 kΩ when employing a 10 : 1 probe or approximately 1 kΩ when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

1) By turning the respective RVs, eliminate all level differences between the median black level and the median blanking level.

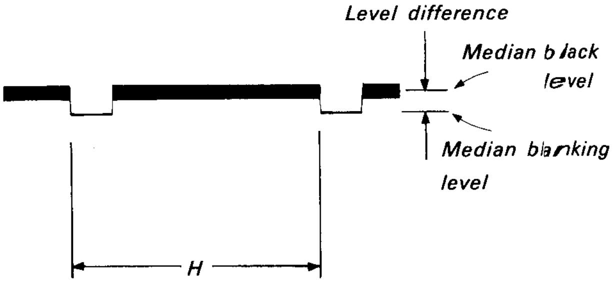


Fig. 7-27.

7-4-18. Carrier Balance Adjustment (ME-4, VI-21 Boards)

Object	Color bar chart standard picture frame
Measurement Point	TP202 on VI-21 board (Pin ② of CN201: CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV728 (CB0°), RV729 (CB90°)
Specified Value	The 3.58 MHz component of black signals should be minimized.

Adjusting method:

1) By turning RV728 and RV729 on the ME-4 board, minimize the amplitude of the black signals.

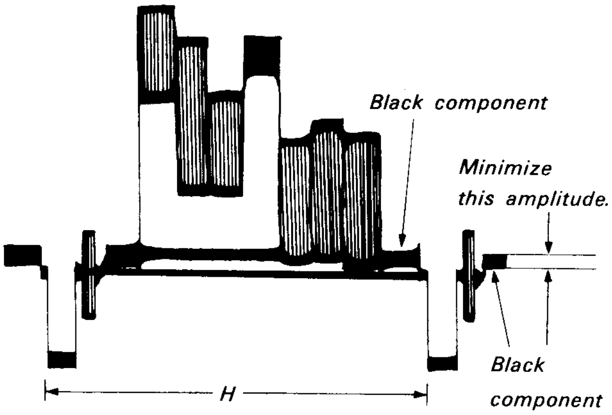

Black component
Minimize this amplitude.
Black component
H

Fig. 7-28.

7-4-19. SET-UP Adjustment (CP-18, VI-21 Boards)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	TP202 on VI-21 board (Pin ② of CN201: CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV701 (SET-UP) on CP-18 board
Specified Value	35±5 mV

Adjusting method:

1) By turning RV701 on CP-18 board, adjust for a 35±5 mV SET-UP level.

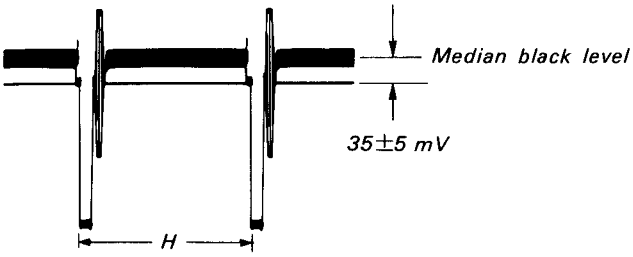

Median black level
35±5 mV
H

Fig. 7-29.

7-4-20. Y-level Adjustment (CP-18, VI-21 Boards)

Object	Color bar chart standard picture frame
Measurement Point	TP202 on VI-21 board (Pin ② of CN201: CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV702 (FDG) on CP-18 board
Specified Value	360^{+0}_{-10} mV

Adjusting method:

1) By turning RV702 on CP-18 board, adjust for a 360^{+0}_{-10} mV Y level.

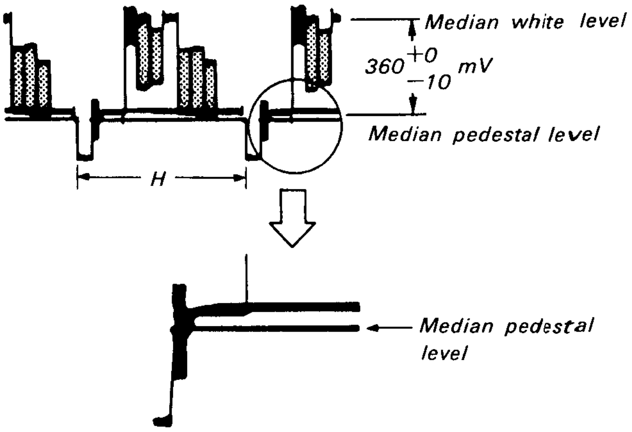

Median white level
360^{+0}_{-10} mV
Median pedestal level
H
Median pedestal level

Fig. 7-30.

7-4-21. Aperture Adjustment (ME-4, VI-21 Boards)

Object	Color bar chart standard picture frame
Measurement Point	TP202 on VI-21 board (Pin ② of CN201: CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV730 (APS) and RV731 (APL) on ME-4 board
Specified Value	RV730: Aperture level at 120±10 mV RV731: Aperture level at 60±10 mV

Note: Preset the following VRs as stipulated, in advance:

1. ME-4 board: RV730 (APS)... Mechanical center
2. ME-4 board: RV731 (APL)... Extreme counterclockwise (↺)
3. CP-18 board: RV703 (WHITE CLIP (2))... Extreme clockwise (↻)

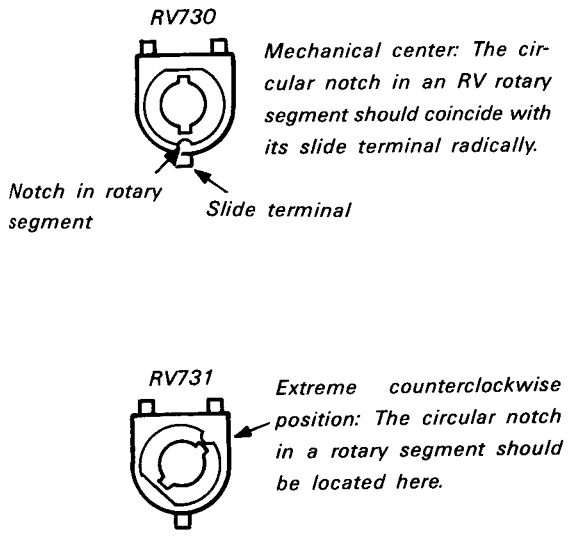

RV730
Mechanical center: The circular notch in an RV rotary segment should coincide with its slide terminal radically.
Notch in rotary segment
Slide terminal
RV731
Extreme counterclockwise position: The circular notch in a rotary segment should be located here.

Fig. 7-31.

Adjusting method:

1) After focusing is completed, slightly swing camera block to the right and left, and fix it where the aperture level in between white and magenta (See Fig. 7-32) is maximized.
2) By turning RV730 on ME-4 board, adjust for a 120±10 mV aperture level.
3) By turning RV731 on ME-4 board, adjust for a 60±10 mV aperture level.

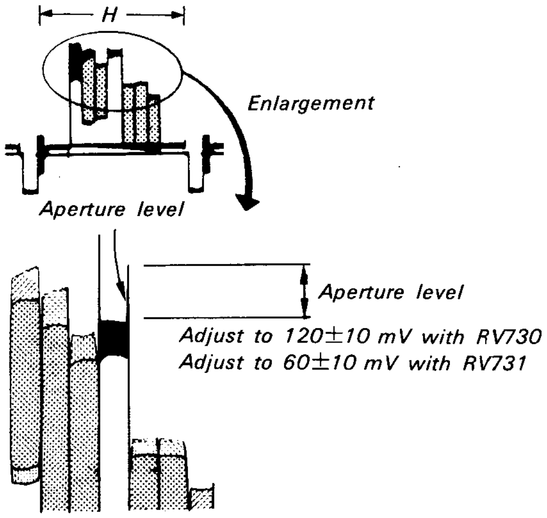

H
Enlargement
Aperture level
Aperture level
Adjust to 120±10 mV with RV730
Adjust to 60±10 mV with RV731

Fig. 7-32.

7-4-22. White Clip Adjustment (2) (CP-18, VI-21 Boards)

Object	High luminance pattern
Measurement Point	TP202 on VI-21 board (Pin ② of CN201: CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV703 on CP-18 board (WHITE CLIP (2))
Specified Value	420±10 mV

Adjusting method:

1) By turning RV703 on CP-18 board, adjust for a 420±10 mV signal level.

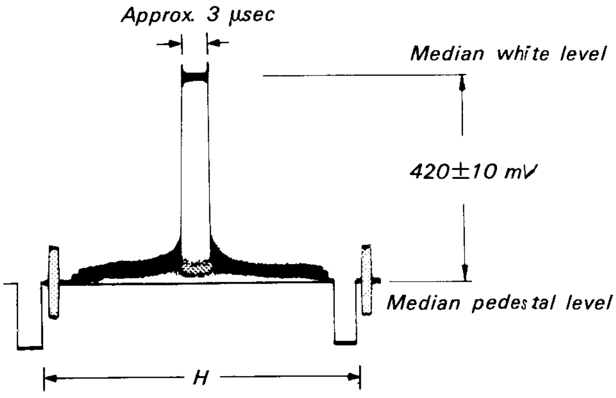

Approx. 3 μsec
Median white level
420±10 mV
Median pedestal level
H

Fig. 7-33.

7-4-23. Output Level Checks (VI-21, CP-18 Boards)

Object	Color bar chart standard picture frame
Measurement Point	TP202 on VI-21 board (Pin ② of CN201: CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	Y level: RV702 (FDG) on CP-18 board SET-UP: RV701 on CP-18 board (SET-UP)
Specified Value	Y level: 360^{+0}_{-10} mV SET UP: 35±5 mV SYNC level: 140±15 mV

Checking method:

1) Check the output level at TP202, and if the specifications fail to meet, make adjustments by turning RV701 and RV702.

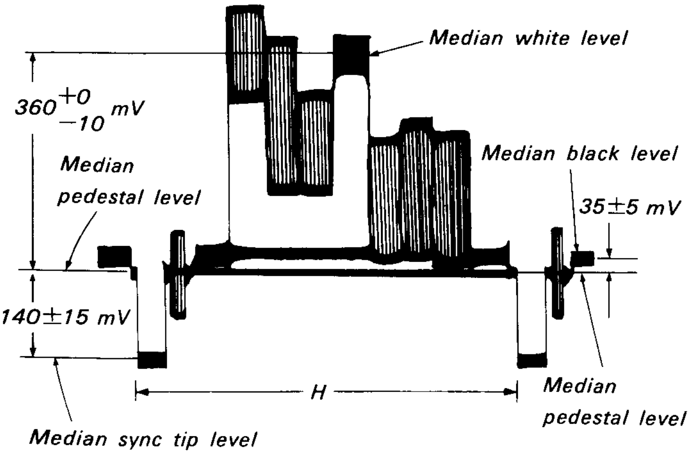

Median white level
360^{+0}_{-10} mV
Median pedestal level
Median black level
35±5 mV
140±15 mV
H
Median pedestal level
Median sync tip level

Fig. 7-34.

7-4-24. Max. Gain Adjustment (ME-4, VI-21 Boards)

Object	Color bar chart standard picture frame
Filter	ND filter: 0.9 . . . 2 pcs. ND filter: 0.4 . . . 1 pc.
Measurement Point	TP202 on VI-21 board (Pin ② of CN201: CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV701 on ME-4 board (MAX GAIN)
Specified Value	180±5 mV

Adjusting method:

1) Mount ND filters of 2.2 (0.9+0.9+0.4) on lens.
2) By turning RV701 on ME-4 board, adjust for a 180±5 mV level.

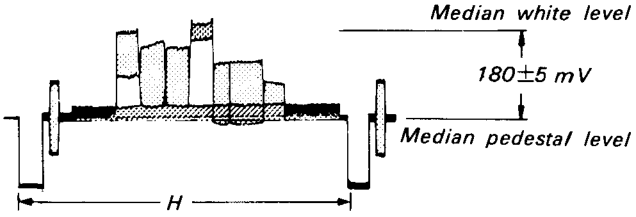

Median white level
180±5 mV
Median pedestal level
H

Fig. 7-35.

7-4-25. AGC Setting Check (AT-5, ME-4 Boards)

Object	Color bar chart standard picture frame
Measurement Point	TP703 (G DET) on ME-4 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV851 (AGC SET) on AT-5 board
Specified Value	250±5 mVp-p

Checking method:

1) Check to assure that the signal level is 250±5 mVp-p.
2) When the specification fails to meet, make adjustments for a 250±5 mVp-p level by turning RV851 on the AT-5 board.

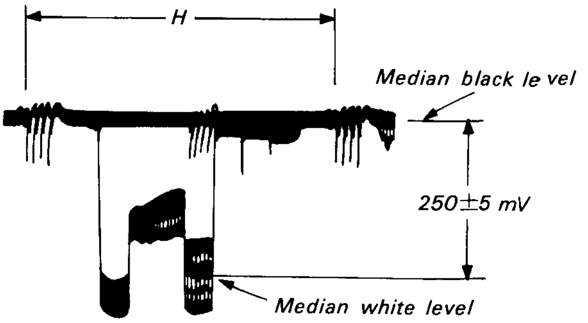

H
Median black level
250±5 mV
Median white level

Fig. 7-36.

7-4-26. LLA Adjustment (AT-5 Board)

Object	Color bar chart standard picture frame
Filter	ND filter: 0.1 . . . 2 pcs. ND filter: 1.0 . . . 1 pc. ND filter: 0.4 . . . 1 pc.
Measurement Point	EVF displays should be observed.
Measuring Instrument	
Adjustment Element	RV852 (LLA)
Specified Value	A "LOW LIGHT" display should be made with ND filter of 1.6. No "LOW LIGHT" display with that of 1.5.

Adjusting method:

1) Engage either a STANDBY or REC mode.
2) Mount ND filter of 1.6 (1.0+0.4+0.1+0.1) on in front of lens.
3) By turning RV852, adjust for no "LOW LIGHT" display in EVF.
4) Slowly turn RV852, and stop turning it where a "LOW LIGHT" display is made.
5) Remove just one ND filter of 0.1.
6) Check to assure that the "LOW LIGHT" display has disappeared.
7) If the display fails to disappear, repeat steps 2) to 6) until it does.

7-4-27. Burst Level Adjustment (ME-4, VI-21 Boards)

Object	Color bar chart standard picture frame
Measurement Point	TP202 on VI-21 board (Pin ② of CN201: CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV727 on ME-4 board (BURST GAIN)
Specified Value	140±5 mVp-p

Adjusting method:

1) By turning RV727, adjust for a 140±5 mVp-p burst level.

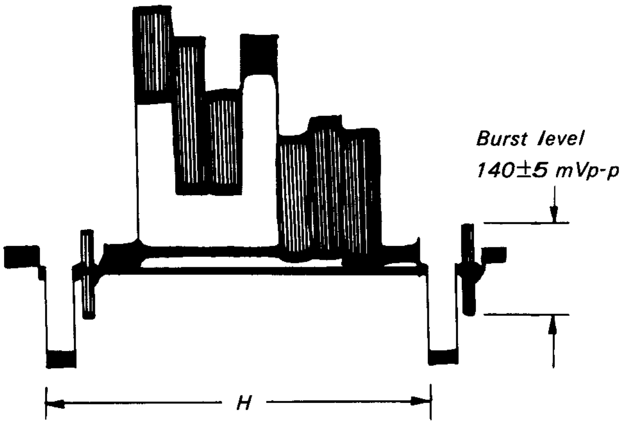


Fig. 7-37.

7-4-28. Indoor White Balance Adjustment (2) (ME-4 Board)

Object	Color bar standard picture frame
Measurement Point	CH1 (X): TP714 (R-Y) CH2 (Y): TP715 (B-Y)
Measuring Instrument	Oscilloscope (X-Y mode)
Adjusting Element	RV710 (INDOOR R) RV711 (INDOOR B)
Specified Value	The white and black luminance spots should coincide with each other in location.

Note: 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.

2) For the elimination of high frequency noises, insert a resistor (approximately 10 kΩ when employing a 10 : 1 probe or approximately 1 kΩ when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

1) By turning RV710 and RV711, have the white luminance spot coincide with the black luminance spot in location.

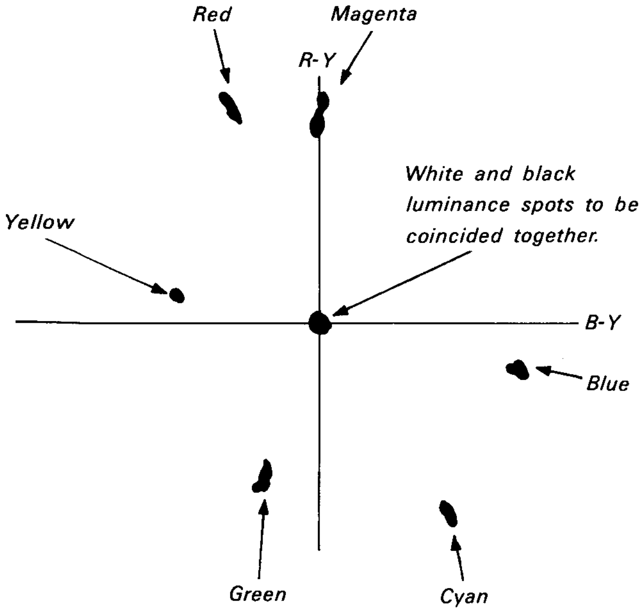


Fig. 7-38.

7-4-29. Color Reproductibility Adjustments (Vectorscope Employing Process) (ME-4 Board)

Object	Color bar chart standard picture frame
Measurement Point	VIDEO OUT terminal of AC adaptor or T/T unit
Measuring Instrument	Vectorscope
Adjusting Element	RV721 (B-Y GAIN) RV723 (B-Y MIX) RV720 (R-Y GAIN) RV726 (HUE)
Specified Value	Each individual luminance color spot should be located within its color reproduction frame. (Fig. 7-39)

Note: First check to assure that the burst luminance spot is located at its specified position and the white luminance spot has coincided with the origin point, before making adjustments. (When the white luminance spot and origin point fail to coincide with each other in location, perform white balance adjustment (RV710 and RV711) and carrier balance adjustment (RV728 and RV729) over again.)

Adjusting method:

1) By turning RV720 and RV726, locate the "red" luminance spot within its color reproduction frame.
2) By turning RV721 and RV723, locate the "yellow" luminance spot within its color reproduction frame.
3) By repeating steps 1) and 2), locate all the respective color luminance spots within their color reproduction frames.

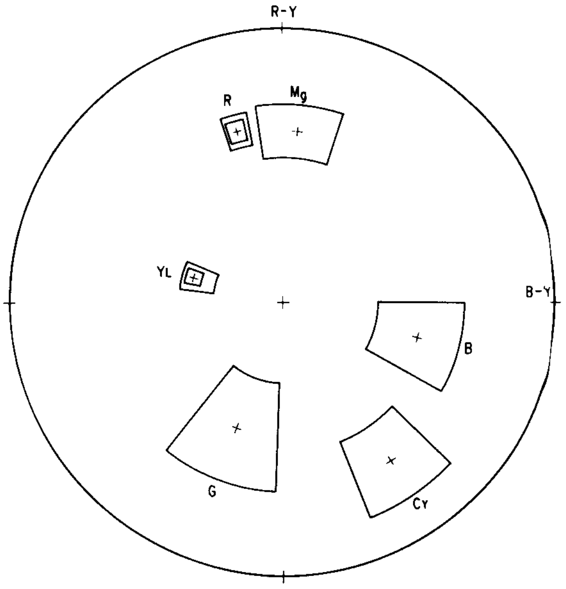
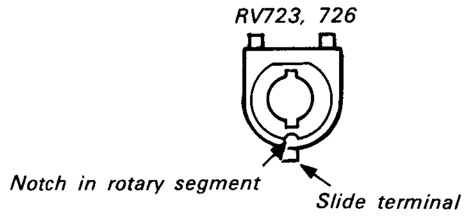


Fig. 7-39.

7-4-30. Color Reproductibility Adjustments (Oscilloscope Employing Process)

A. Gain adjustment (ME-4, VI-21 boards)

Object	Color bar chart standard picture frame
Measurement Point	TP202 on VI-21 board (Pin ② of CN201: CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV721 (B-Y GAIN) on ME-4 board RV720 (R-Y GAIN) on ME-4 board
Specified Value	"Magenta" level: 235±5 mVp-p "Yellow" level: 127±5 mVp-p



Mechanical center: The circular notch in an RV rotary segment should coincide with its slide terminal position radically.

Fig. 7-40.

Adjusting method:

1) Set RV723 (B-Y MIX) on ME-4 board at its mechanical center. (See Fig. 7-40)
2) By turning RV720 on ME-4 board, adjust for a "Magenta" amplitude at 235±5 mVp-p. (Fig. 7-41 ①)
3) By turning RV721 on ME-4 board, adjust for a "Yellow" amplitude at 127±5 mVp-p. (Fig. 7-41 ②)

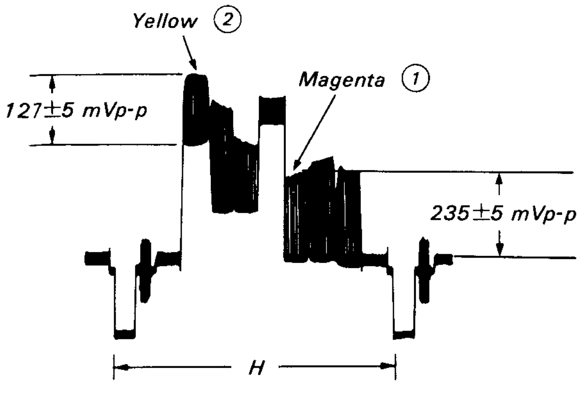


Fig. 7-41.

B. Hue adjustment (ME-4 board)

Object	Color bar standard picture frame
Measurement Point	CH1 (X): TP715 (B-Y) CH2 (Y): TP714 (R-Y)
Measuring Instrument	Oscilloscope (X-Y mode) * With an oscilloscope oriented color reproduction frame stuck on in advance.
Adjusting Element	RV723 (B-Y MIX) RV726 (HUE)
Specified Value	Respective color luminance spots should be located within their color reproduction frame. (See Fig. 7-42)

Note: 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.

2) For the elimination of high frequency noises, insert a resistor (approximately 10 kΩ when employing a 10 : 1 probe or approximately 1 kΩ when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

1) Have the "black" luminance spot on the oscilloscope coincide with the origin point of the color reproduction frame in location.
2) Check to assure that the "white" and "black" luminance spots are coincided with each other in location. (If they have not, make white balance adjustments (RV710 and RV711) over again.)
3) By turning RV723, locate the "red" and "yellow" luminance spots within their color reproduction frames. (Also check to assure that the other color luminance spots have been located within their color reproduction frame.)
4) Set RV726 at its mechanical center. (See Fig. 7-40)
5) Check the colors reproduced on the monitor screen, and fine-adjust RV726 if required.

   Note: 1) The monitor TV hue adjustment should have been completed in advance.

   2) "Magenta" is reproduced in a slightly reddish tone.

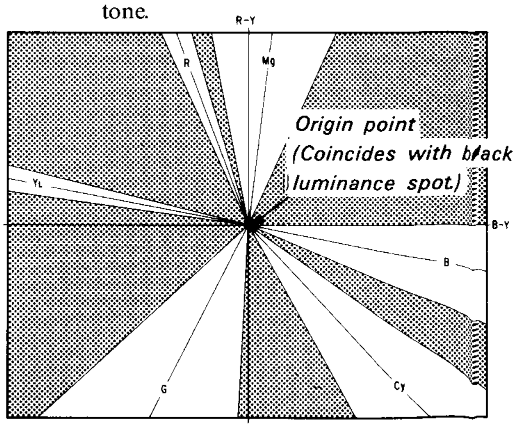


Fig. 7-42.

7-4-31. Outdoor White Balance Adjustment (Vectorscope Employing Process) (ME-4 Board)

Object	Color bar chart standard picture frame
Filter	Daylight filter (C14)
Measurement Point	VIDEO OUT terminal of either AC adaptor or T/T unit
Measuring Instrument	Oscilloscope
Adjusting Element	RV709 (OUTDOOR R) RV712 (OUTDOOR B)
Specified Value	See Fig. 7-43

Adjusting method:

1) With a daylight filter dismounted, check to assure that the white luminance spot on the vectorscope is located at the origin point when the WHITE BALANCE switch (S672 on CG-1 board) is set at its INDOOR (💡) position. (If the spot is not at the origin point, make white balance adjustments (RV710 and RV711) and carrier balance adjustments (RV728 and RV729) over again.)
2) Mount a daylight filter on the lens, and set the WHITE BALANCE switch at its OUTDOOR (☼) position.
3) By turning RV709 and RV712, adjust the white luminance spot to the lower left of the origin point and at 1 mm on the Q axis.
4) Restore an INDOOR (💡) position setting of the WHITE BALANCE switch.

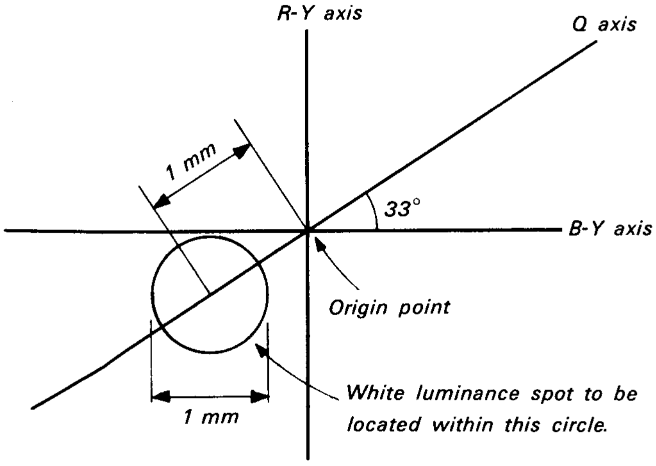


Fig. 7-43.

7-4-32. Outdoor White Balance Adjustment (Oscilloscope Employing Process) (ME-4 Board)

Object	Color bar chart standard picture frame
Filter	Daylight filter (C14)
Measurement Point	CH1 (X): TP715 (B-Y) CH2 (Y): TP714 (R-Y)
Measuring Instrument	Oscilloscope (X-Y mode)
Adjusting Element	RV709 (OUTDOOR R) RV712 (OUTDOOR B)
Specified Value	See Fig. 7-44

Note: 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.

2) For the elimination of high frequency noises, insert a resistor (approximately 10 kΩ when employing a 10 : 1 probe or approximately 1 kΩ when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

1) Set the WHITE BALANCE switch (S672 on CG-1 board) at its OUTDOOR (☼) position.
2) By turning RV709, adjust for a 3 mV potential difference in the R-Y axis direction between centers of the white and black luminance spots (with the white luminance spot situated beneath the black luminance spot).
3) By turning RV712, adjust for a 4 mV potential difference in the B-Y axis direction between centers of the white and black luminance spots (with the white luminance spot situated to the left of the black luminance spot).
4) Restore an INDOOR (💡) position of the WHITE BALANCE switch.

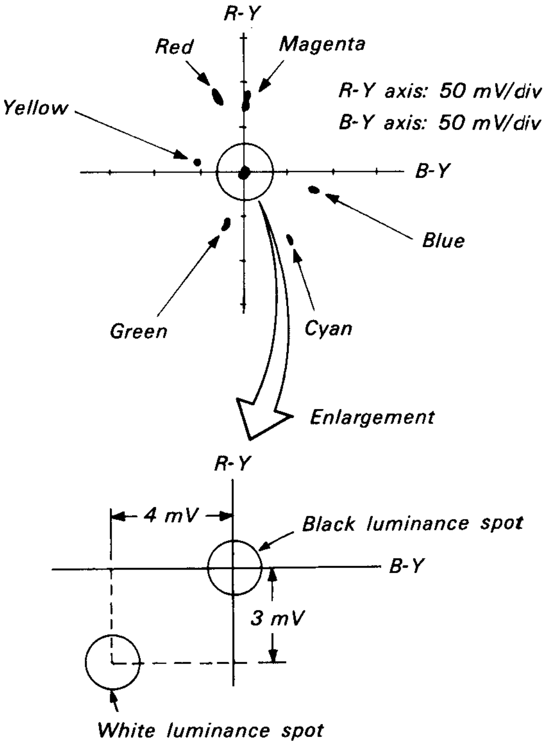


Fig. 7-44.

7-4-33. Auto-tracking White Balance Adjustments (AT-5, AW-3, ME-4 Boards)

Object	Totally white pattern *Note: 1)
Measurement Point	CH1 (X): TP715 (B-Y) on ME-4 board CH2 (Y): TP714 (R-Y) on ME-4 board
Measuring Instrument	Oscilloscope (X-Y mode)
Adjusting Element	RV853 (WR OFFSET) on AT-5 board RV854 (WB OFFSET) on AT-5 board RV701 (SR GAIN) on AW-3 board RV702 (SB GAIN) on AW-3 board

Note: 1) If any other light than that from pattern box enters the WHITE BALANCE sensor (SB701 on AS-13 board), no valid adjustments are possible. Accordingly, adjustments should preferably be made in a dark room or equivalent, but where such an arrangement is not possible, follow the instructions below before making adjustments.

1. Place camera block on a piece of black paper or equivalent. (This precaution is required even when making adjustments in a dark room.)
2. Bring camera block and pattern box closer together than 0.5m apart. (No focusing is required, however.)
3. Cover the WHITE BALANCE sensor with black paper or equivalent to block any other light than that of pattern box from entering the sensor.

2) When potential difference readings are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.

3) For the elimination of high frequency noises, insert a resistor (approximately 10 kΩ when employing a 10 : 1 probe or approximately 1 kΩ when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

1) Set the WHITE BALANCE switch (S671 on CG-1 board) at its AUTO position.
2) Connect TP701 ($\overline{\text{ONE PUSH}}$) on AW-3 board to ground with a jumper wire.
3) Connect TP702 (WRITE) on AW-3 board to Pin ⑦ of CN703 (5V) on AW-3 board with a jumper wire.
4) By turning RV853 and RV854 on AT-5 board, have the white and black luminance spots coincide with each other.
5) Disconnect the TP701 connecting jumper wire.
6) Disconnect the TP702 connecting jumper wire.
7) By turning RV701 and RV702 on AW-3 board, have the white and black luminance spots coincide with each other.
8) Set the WHITE BALANCE switch at its INDOOR (☼) position.

White and black luminance spots to be superimposed together.

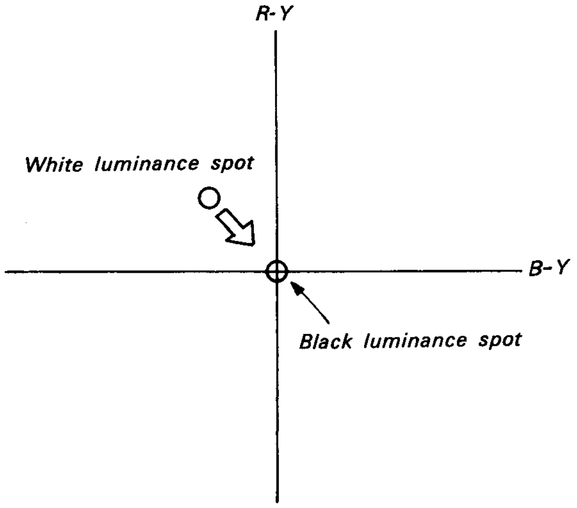


Fig. 7-45.

7-4-34. Auto-tracking White Balance Operational Checks

Object	Totally white pattern *Note
Filter	Color temperature compensating filters: C22 and W14
Measurement Point	Run checks on the monitor TV screen.
Measuring Instrument	

Note: Refer to note 1) in the last paragraph.

Checking method:

1) Set the WHITE BALANCE switch (S671 on CG-1 board) at its AUTO position.
2) Cover camera block with black paper or equivalent, to prevent the incidence of any other light than that of pattern box to the WHITE BALANCE sensor (SB701 on AS-13 board).
3) Check to assure that there is no coloring on the monitor screen.
4) Mount color temperature compensating filter C22 on the WHITE BALANCE sensor (exercising care against the entry into the sensor of any other light than that through the filter, with black paper or equivalent).
5) Check the monitor screen to assure it has turned orange in color.
6) Exchange the color temperature compensating filter to W14.
7) Check the monitor screen to assure that it has turned cyan in color.
8) Restore an INDOOR (☼) position of the WHITE BALANCE switch.

7-5. CHARACTER GENERATOR SYSTEM ADJUSTMENT

7-5-1. Character Generator Clock Frequency Adjustment (CG-1, FC-10 Boards)

Mode	Standby
Object	Arbitrary
Measurement Point	Pin ③ of CN672 on CG-1 board
Measuring Instrument	Oscilloscope
Adjusting Element	CT671 on CG-1 board
Specified Value	39.0±0.5 μsec

Connection:

1) Make jumper wire connections at the two following locations on the FC-10 board.
    1. Pin ⑱ of IC601 ($\overline{\text{CAM DOWN}}$) — GND
    2. TP603 (Pin ⑲ of IC601: $\overline{\text{TEST}}$) — GND

Adjusting method:

1) Switch CAMERA POWER (S674 on CG-1 board) on, and engage a standby mode.
2) Check to assure the display either on a monitor TV or the EVF screen of the characters such as shown in Fig. 7-46.
3) By operating CT671, adjust for a 39.0±0.5 μsec cycle time. (See Fig. 7-47)

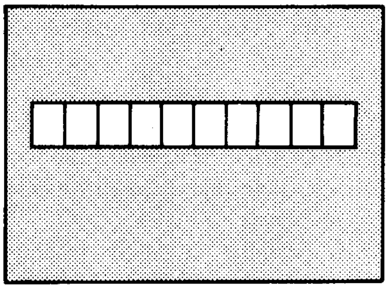


Fig. 7-46.

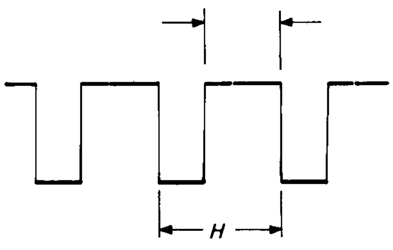


Fig. 7-47.

7-5-2. Clock Frequency Adjustment (FC-10 Board)

Mode	Standby
Object	Arbitrary
Measurement Point	Pin ㊲ of IC601
Measuring Instrument	Frequency counter
Adjusting Element	CT601
Specified Value	8192.00±0.05 Hz

Connection:

1) Make jumper wire connections at the two following locations.
    1. Pin ⑱ of TC601 ($\overline{\text{CAM DOWN}}$) – GND
    2. TP603 (Pin ⑲ of TC601: $\overline{\text{TEST}}$) – GND

Adjusting method:

1) Switch CAMERA POWER (S674 on CG-1 board) on, and engage a standby mode.
2) Check to assure the display either on a monitor TV or the EVF screen of the characters such as shown in Fig. 7-46.
3) By operating CT601, adjust for a 8192.00±0.05 Hz frequency.

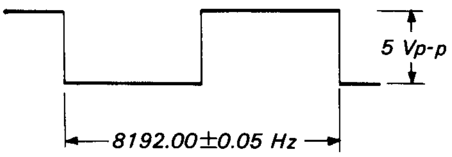


Fig. 7-48.

7-5-3. Wiper Adjustment (FC-10 Board)

Mode	Standby
Object	Arbitrary
H_T adjustment	
Measurement Point	Pin ⑭ of IC604
Measuring Instrument	Oscilloscope
Adjusting Element	RV602
Specified Value	1.5±0.1 μsec
V_T adjustment	
Measurement Point	Run checks on the monitor TV screen.
Measuring Instrument	
Adjusting Element	RV601
Specified Value	The wiper window height and width should be equal to each other.

Connection:

1) Supply Pin ① of W603 (A.FADER) on FC-10 board with the 3.00± 0.05Vdc DC voltage from a regulated-DC power supply.
2) Connect TP603 (Pin ⑲ of IC601: $\overline{\text{TEST}}$) to GND with a jumper wire.

Adjusting method:

1) By turning RV602, adjust the width of H_T pulses generated at Pin ⑭ of IC604 to 1.5±0.1 μsec.

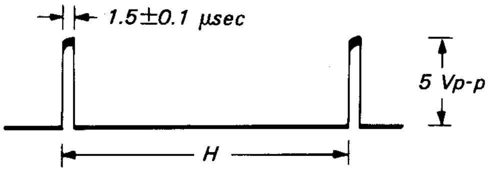
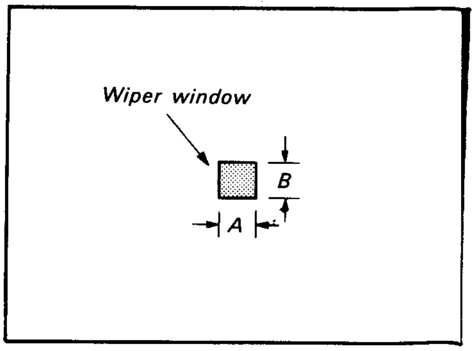


Fig. 7-49.

2) By turning RV601, equalize the height and width of the wiper window displayed on the monitor TV screen.

Equalize B to A by turning RV601.



Monitor TV screen

Fig. 7-50.

7-6. ELECTRONIC VIEW FINDER (EVF) SYSTEM ADJUSTMENT

7-6-1. Horizontal Tilt Adjustment

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3NSP), monoscope portion
Specified Value	See Fig. 7-52

Adjusting method:

1) By turning RV705 (BRIGHT), adjust for a luminance level that provides appropriate visibility of the CRT screen.
2) Loosen the DY (deflection yoke) tightening band.
3) By turning DY, achieve a horizontal position of the image.
4) Position the DY rear end 52.5±0.3 mm away from the CRT face plate.
5) Retighten the DY tightening band (exercising care against any excessive tightening).

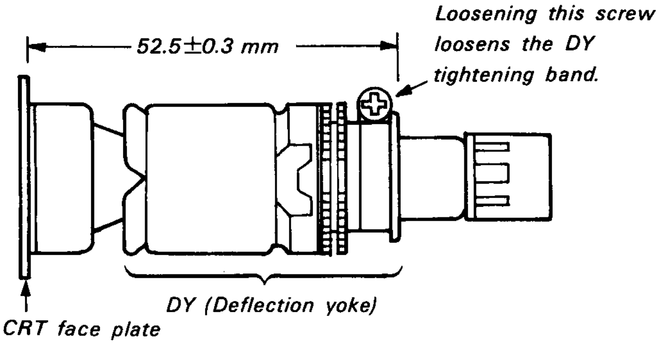
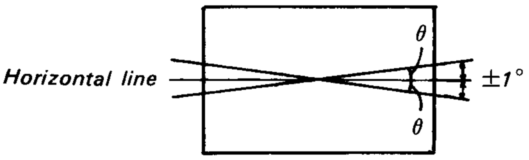

52.5±0.3 mm
Loosening this screw loosens the DY tightening band.
DY (Deflection yoke)
CRT face plate

Fig. 7-51.


Horizontal line
θ
θ
±1°

Specified value: Image orientation to be within ±1° of horizontal line

Fig. 7-52.

7-6-2. Centering Adjustment

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3NSP), monoscope portion
Specified Value	See Fig. 7-54

Adjusting method:

1) By operating centering magnets, provide the image with even peripheral margins, both horizontally and vertically.

Note: Since the centering position is affected by the earth magnetism, turn the equipment over 360° horizontally, and make adjustments at the orientation that exhibits median displacements of the image.

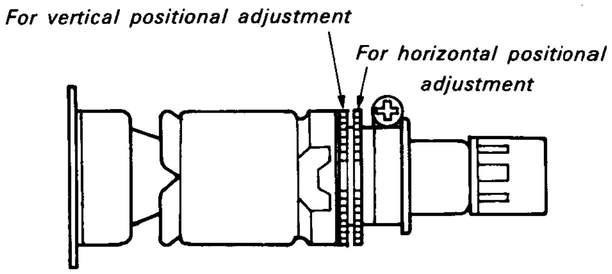
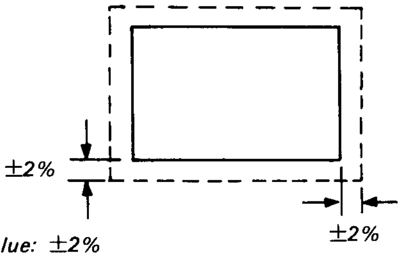

For vertical positional adjustment
For horizontal positional adjustment

Fig. 7-53.



Adjusted value: ±2%

Fig. 7-54.

7-6-3. Horizontal Oscillating Frequency Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3NSP)
Measurement Point	Positive terminal of C708
Measuring Instrument	Digital voltmeter or oscilloscope (DC range)
Adjusting Element	RV702
Specified Value	2.65±0.1Vdc

Adjusting method:

1) By turning RV702, adjust for a 2.65±0.1Vdc terminal voltage.

7-6-4. Horizontal Amplitude Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3NSP), monoscope portion
Adjusting Element	C718, C719
Specified Value	6±3%

Adjusting method:

1) By turning RV704, focus the image.
2) By turning RV701, align upper and lower edges of the monoscope image with those of the screen.
3) By turning RV705, attain a normal brightness level.
4) To achieve 6±3% horizontal overscans (the right and left overscans put together), short-circuit or open the patterns (A and B) for H size adjusting capacitors (C718 and C719), one at a time until the overscan level is achieved. (See Fig. 7-56)

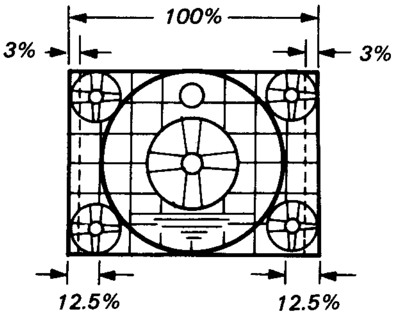
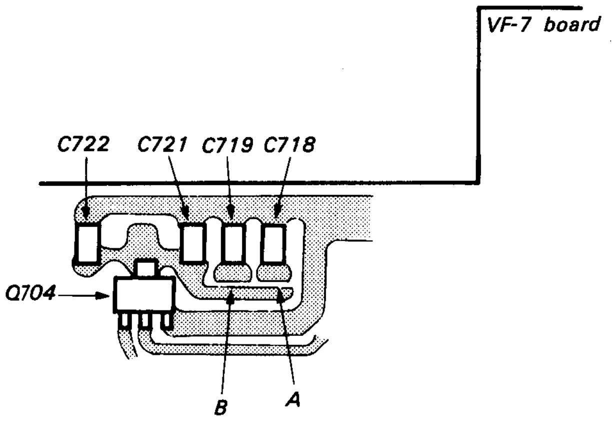


Fig. 7-55.



A	B	H size
Open	Open	Small
Short-circuit	Open	↓
Open	Short-circuit	
Short-circuit	Short-circuit	Large

Fig. 7-56.

7-6-5. Vertical Amplitude Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3NSP), monoscope portion
Adjusting Element	RV701
Specified Value	6±3%

Adjusting method:

1) By turning RV701, adjust for 6±3% vertical overscans (the top and bottom overscans put together).

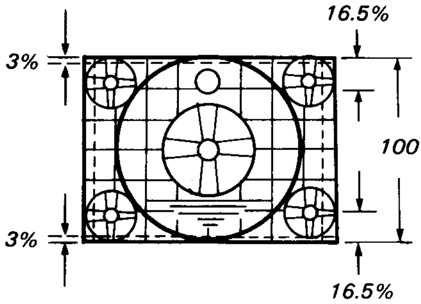


Fig. 7-57.

7-6-6. Brightnes, Contrast Adjustments (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3 NSP), monoscope portion
Adjusting Element	Brightness: RV705 Contrast: RV703

Adjusting method:

1) By turning RV705 and RV703 alternately, adjust for the valid display of light and dark areas of a gray scale. (The light area should not be made light enough for a fuzzy display of cross-hatches within the monoscopic circle, nor should the dark area be made dark enough to disable identifying the darkest and second darkest stripes of a gray scale apart.)

7-6-7. Focus Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3NSP), monoscope portion
Adjusting Element	RV704

Adjuting method:

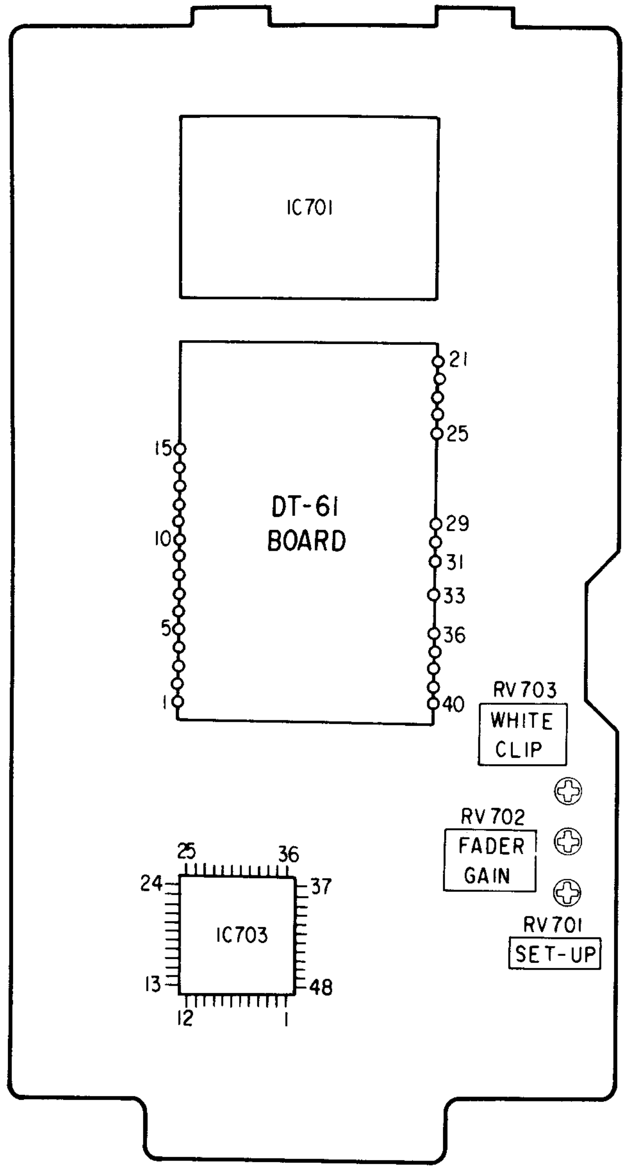
1) By turning RV704, adjust for the optimally focused images.

7-6-8. Horizontal and Vertical Amplitude Checks

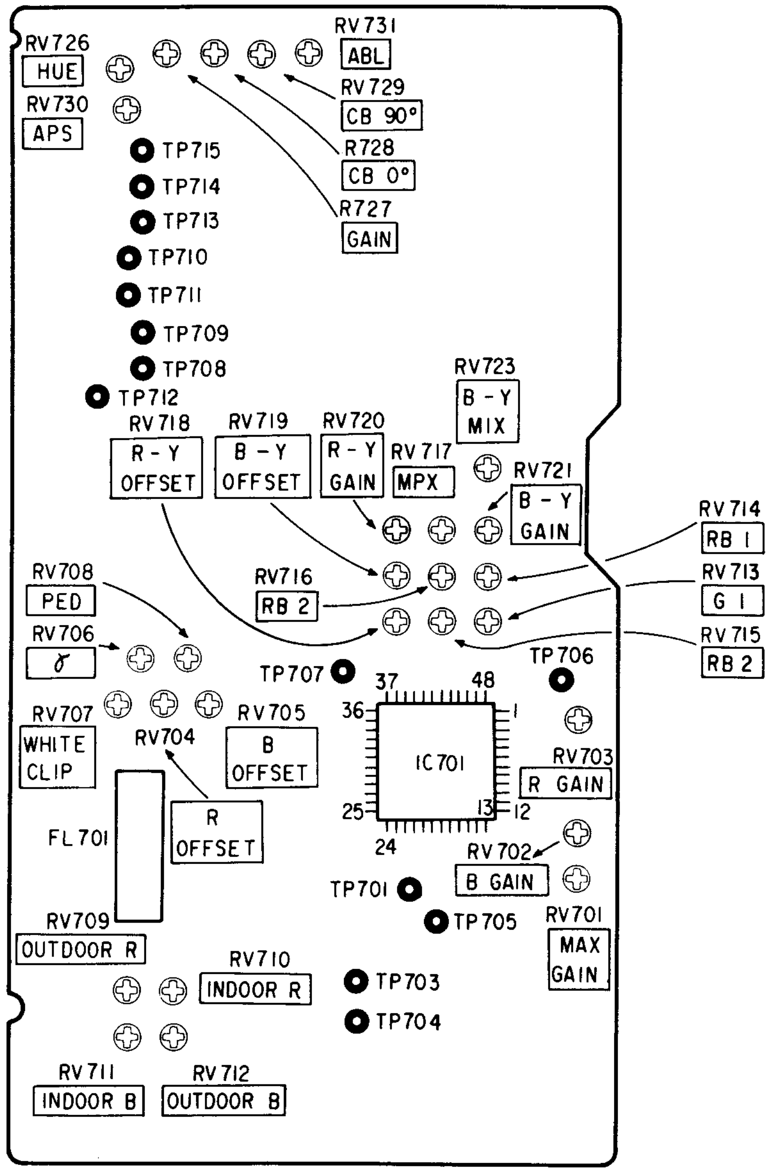
Specifications should have been met by 7-6-4. Horizontal amplitude adjustment and 7-6-5. Vertical amplitude adjustment, but if they are not, readjustments should be made. In the latter case, 7-6-6. Brightness/contrast adjustments and 7-6-7. Focusing adjustment should also be made over again.

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

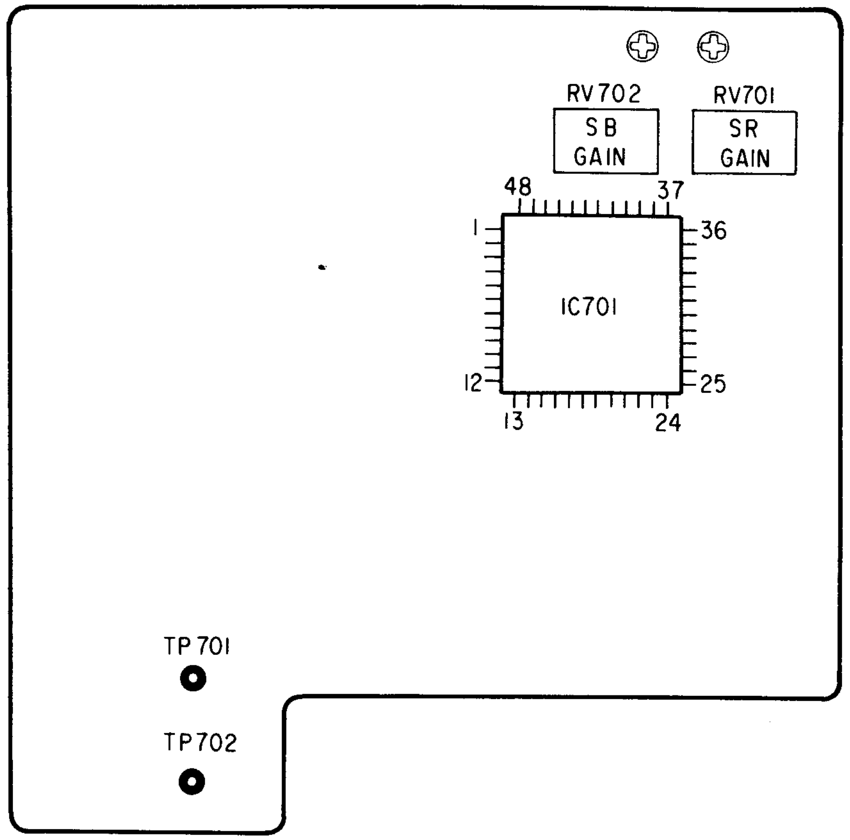
CP-18 BOARD (COMPONENT SIDE)


IC701
DT-61 BOARD
21
25
29
31
33
36
40
15
10
5
1
RV703
WHITE CLIP
RV702
FADER GAIN
RV701
SET-UP
IC703
25
36
24
37
13
48
12
1

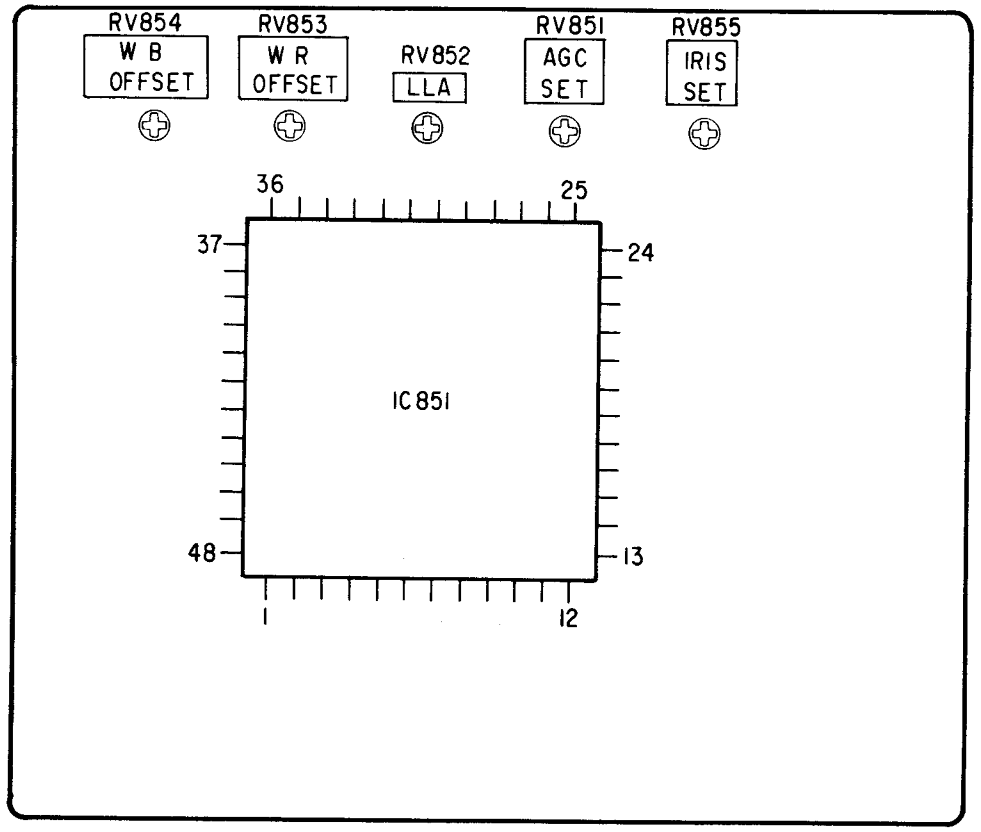
ME-4 BOARD (COMPOMENT SIDE)


RV726
HUE
RV730
APS
RV731
ABL
RV729
CB 90°
R728
CB 0°
R727
GAIN
TP715
TP714
TP713
TP710
TP711
TP709
TP708
TP712
RV718
R-Y OFFSET
RV719
B-Y OFFSET
RV720
R-Y GAIN
RV717
MPX
RV723
B-Y MIX
RV721
B-Y GAIN
RV714
RB 1
RV713
G 1
RV715
RB 2
RV708
PED
RV716
RB 2
RV706
γ
TP707
37
48
TP706
36
1
IC701
RV703
R GAIN
RV707
WHITE CLIP
RV704
RV705
B OFFSET
FL701
R OFFSET
25
13
12
24
RV702
B GAIN
TP701
TP705
RV701
MAX GAIN
RV709
OUTDOOR R
RV710
INDOOR R
TP703
TP704
RV711
INDOOR B
RV712
OUTDOOR B

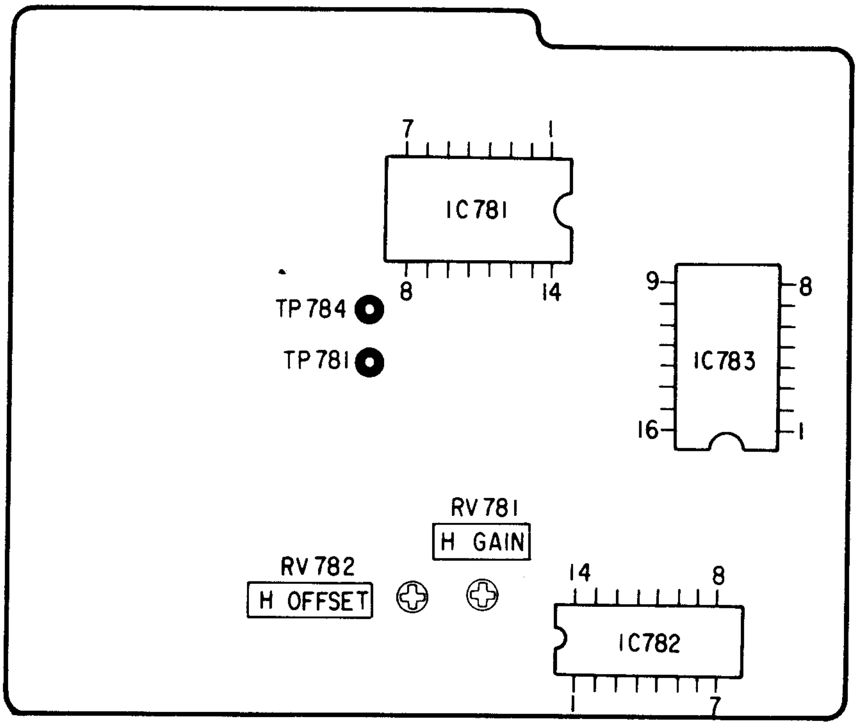
AW-3 BOARD (COMPOMENT SIDE)


RV702
SB GAIN
RV701
SR GAIN
48
37
1
36
IC701
12
25
13
24
TP701
TP702

AT-5 BOARD (COMPOMENT SIDE)

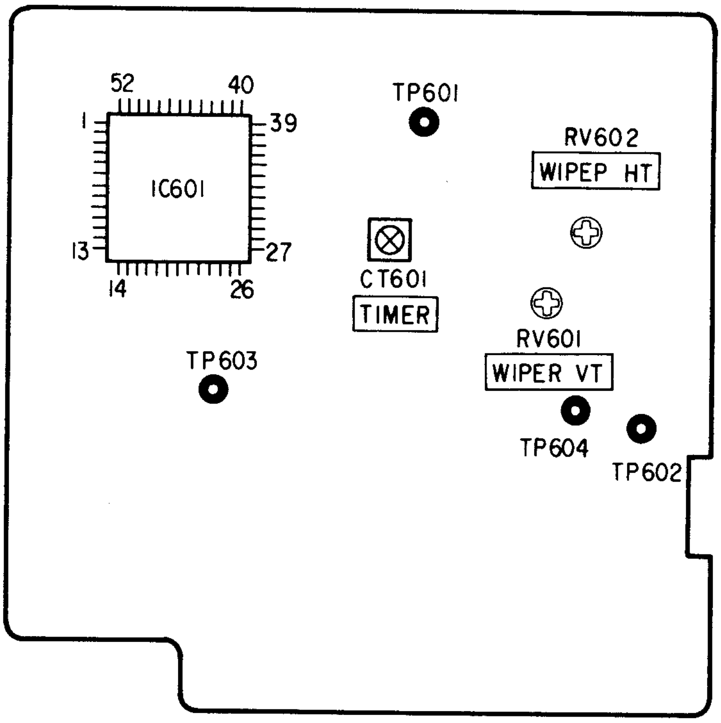

RV854
WB OFFSET
RV853
WR OFFSET
RV852
LLA
RV851
AGC SET
RV855
IRIS SET
36
25
37
24
IC851
48
13
1
12

AI-1 BOARD (COMPOMENT SIDE)



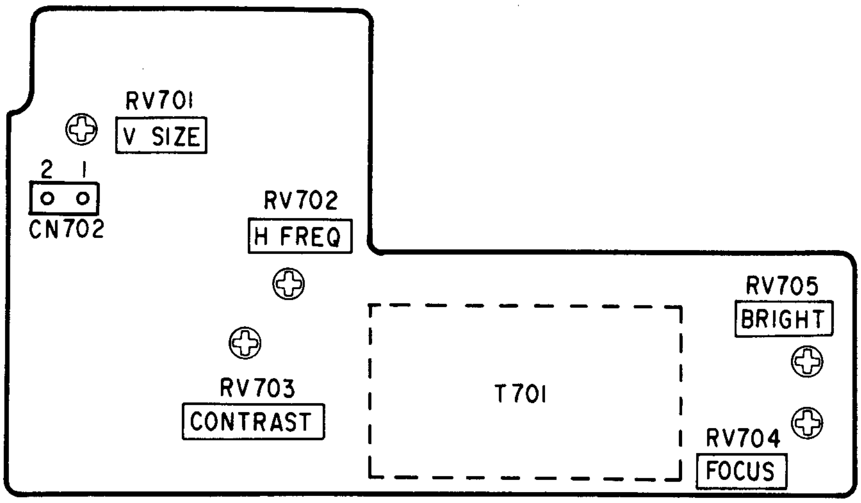
7
1
IC781
8
14
9
8
IC783
16
1
TP784
TP781
RV781
H GAIN
RV782
H OFFSET
14
8
IC782
1
7

FC-10 BOARD (COMPOMENT SIDE)

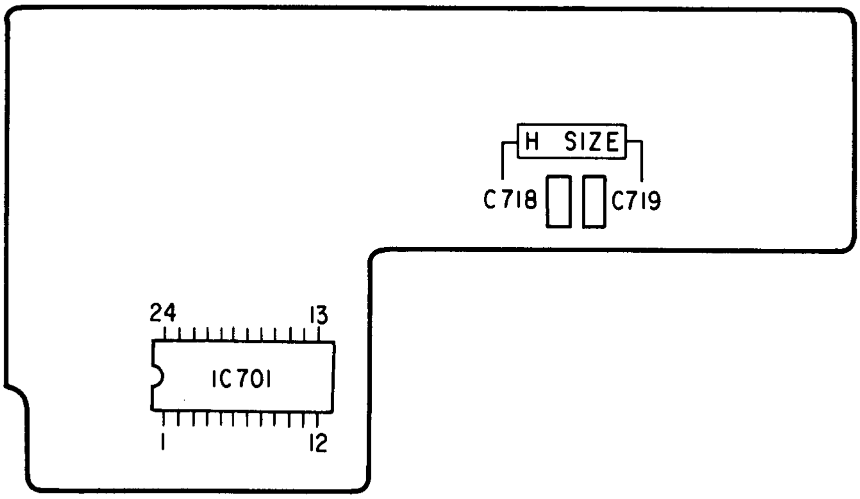


52
40
1
39
IC601
13
27
14
26
TP601
RV602
WIPEP HT
CT601
TIMER
RV601
WIPER VT
TP603
TP604
TP602

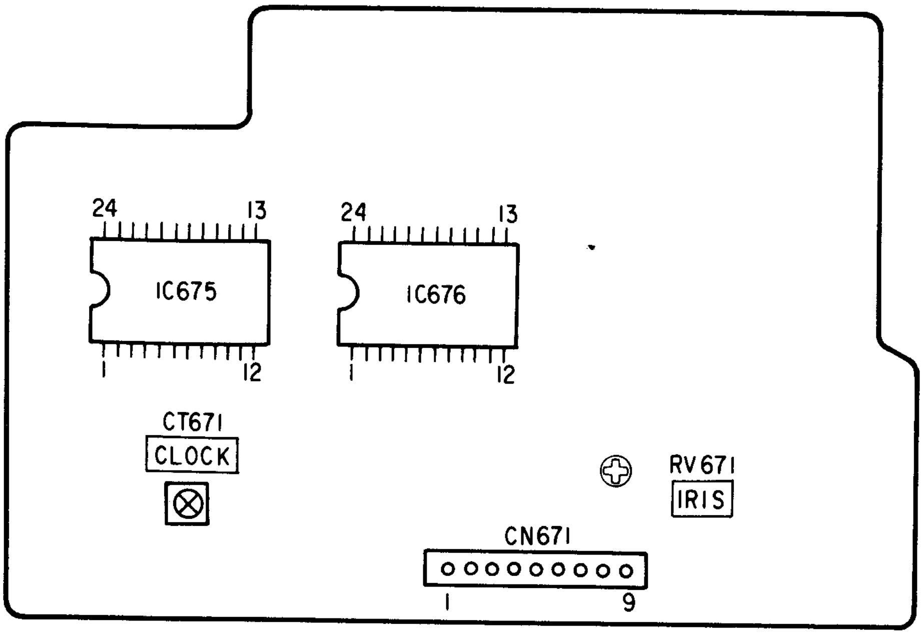
VF-7 BOARD (COMPOMENT SIDE)


RV701
V SIZE
2
1
CN702
RV702
H FREQ
RV705
BRIGHT
RV703
CONTRAST
T701
RV704
FOCUS

VF-7 BOARD (SOLDERING SIDE)


H SIZE
C718
C719
24
13
IC701
1
12

CG-1 BOARD (COMPOMENT SIDE)


24
13
IC675
1
12
24
13
IC676
1
12
CT671
CLOCK
RV671
IRIS
CN671
1
9

SECTION 8
MECHANISM ADJUSTMENTS

8-1. PREPARATION ITEMS FOR MECHANISM SECTION CHECKING, ADJUSTMENT AND REPLACEMENT

Note: Regarding removal of cabinet and respective boards, see Section 2. DISASSEMBLY.

8-1-1. Remounting of Cassette Compartment Assembly (See Fig. 8-1a)

1) Remount DEW assembly ❶ with screw ❷.
2) Remount cassette compartment assembly ❸ and tighten four screws ❹ by referring to Figs. 8-1a and lb.
(At this point, care should be taken not to hit cassette compartment assembly ❸, so set the eject disk ❺ in the direction of arrow.)
3) Hook the harness on claw ❻.
4) Remount leaf switch ❼ with screw ❽.
5) See Section 2, 2-10, and remount the DR-36 board.
6) See Section 2, 2-8, and remount the AU-24 board and the TS-55 board.

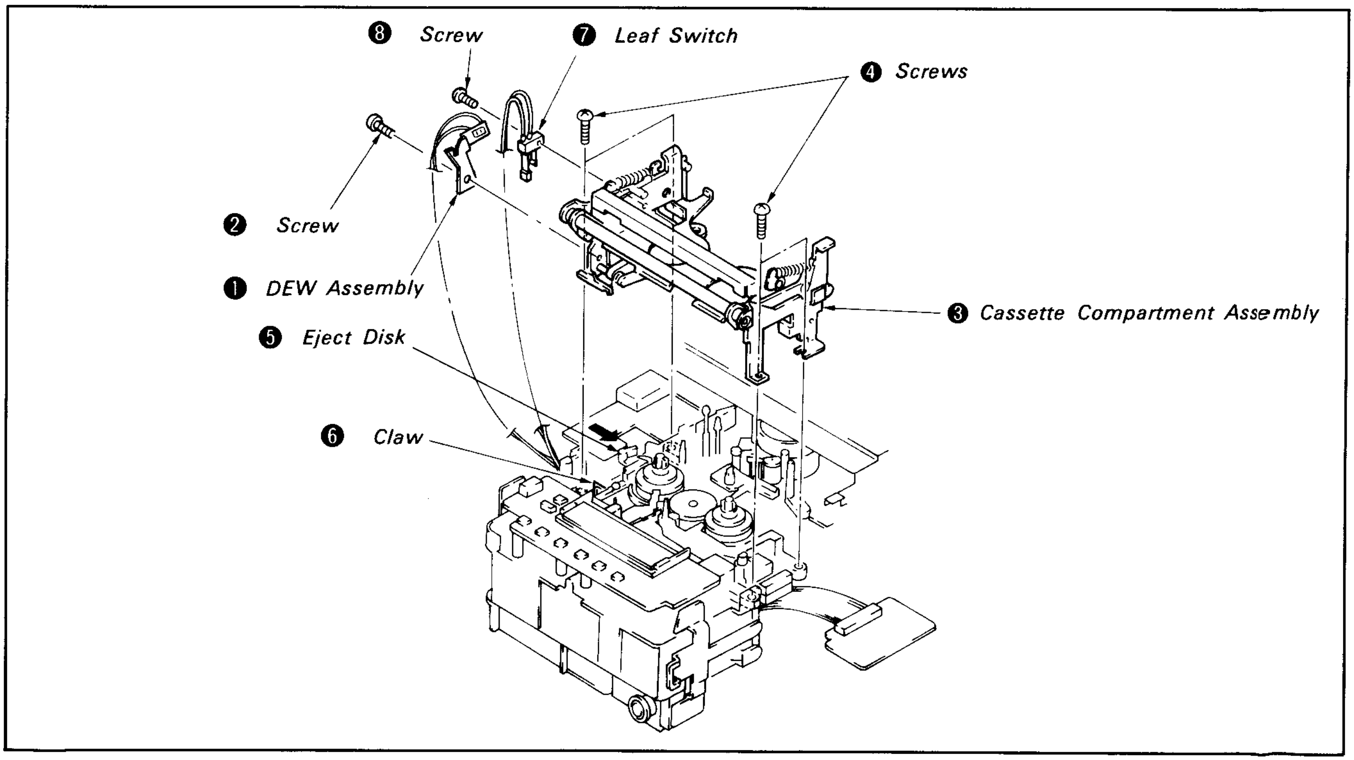

❽ Screw
❼ Leaf Switch
❹ Screws
❷ Screw
❶ DEW Assembly
❺ Eject Disk
❸ Cassette Compartment Assembly
❻ Claw

Fig. 8-1a.

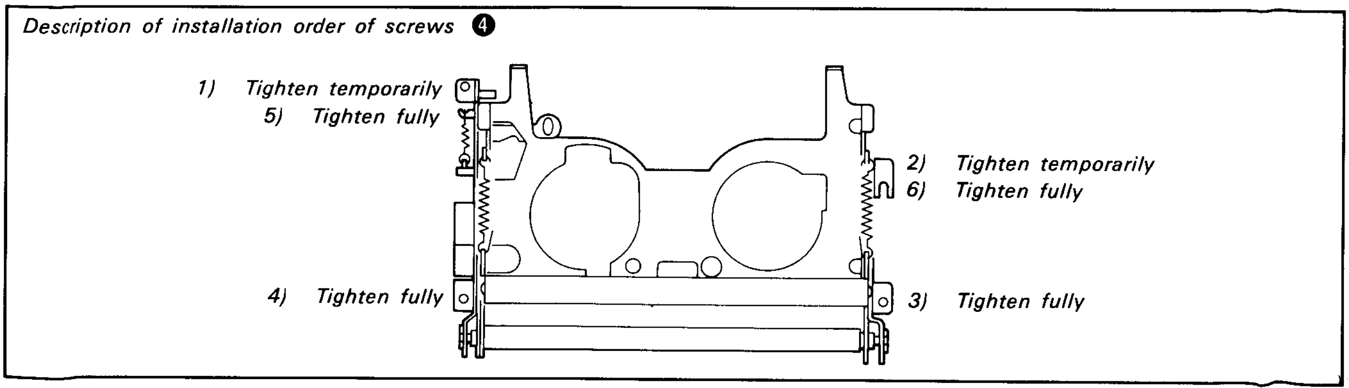

Description of installation order of screws ❹
1) Tighten temporarily
5) Tighten fully
2) Tighten temporarily
6) Tighten fully
4) Tighten fully
3) Tighten fully

Fig. 8-1b.

8-1-2. Operating without Cassette Compartment Assembly and a Tape

Note: Take note that if there is a strong light source near the set, there are cases in which the set may not operate.

1. Method to loading (See Fig. 8-2)

1) Mount a battery pack and turn ON power supply switch ❶.
2) Adhere tape onto the pin which extends from RECOG SW assembly ❷.
3) Turn ON the leaf switch ❸.

2. Method to set playback mode (See Fig. 8-2)

1) Mount a battery pack and turn ON power supply switch ❶.
2) Apply a rubber ring ❹ between S reel side and T reel side.
3) Press the playbak button and press tension Regulator arm assembly ❺ in the direction of arrow when the T reel side starts to rotate.
(At this point, the tension Regulator band is released and the S reel side starts to rotate.)
4) Press the STOP button to stop.

3. Method to set recording mode (See Fig. 8-2)

1) Mount a battery pack and turn ON the power supply switch ❶.
2) Apply a rubber ring ❹ between S reel side and T reel side.
3) Press the RECORD button and press tension Regulator arm assembly ❺ in the direction of arrow when the T reel side starts to rotate.
(At this point, the tension Regulator band is released and the S reel side starts to rotate.)
4) Press the STOP button to stop.

4. Method to eject

1) Press the EJECT button.

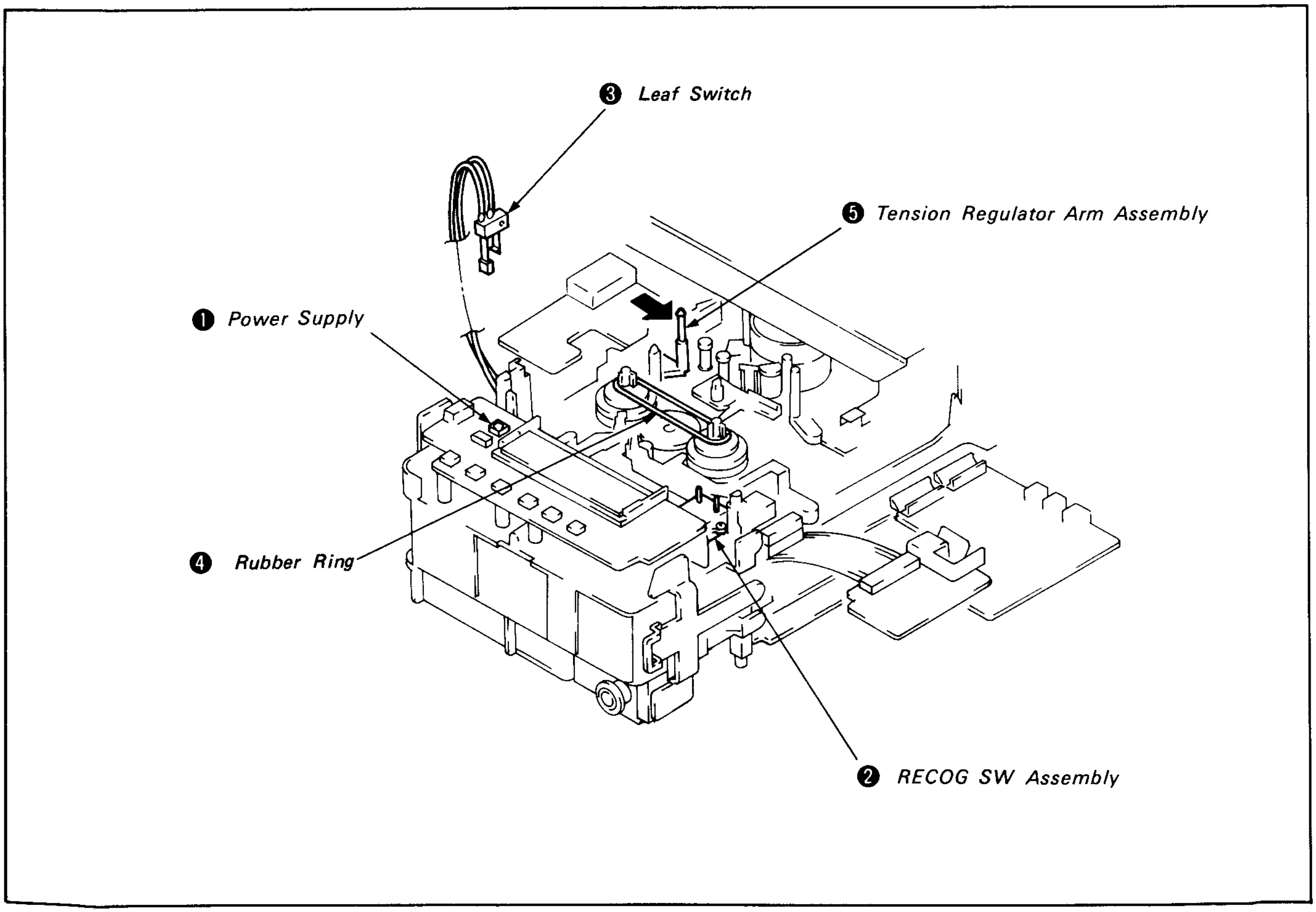


Fig. 8-2.

8-1-3. Mode Selector Operation

1. Selector parts (External view)

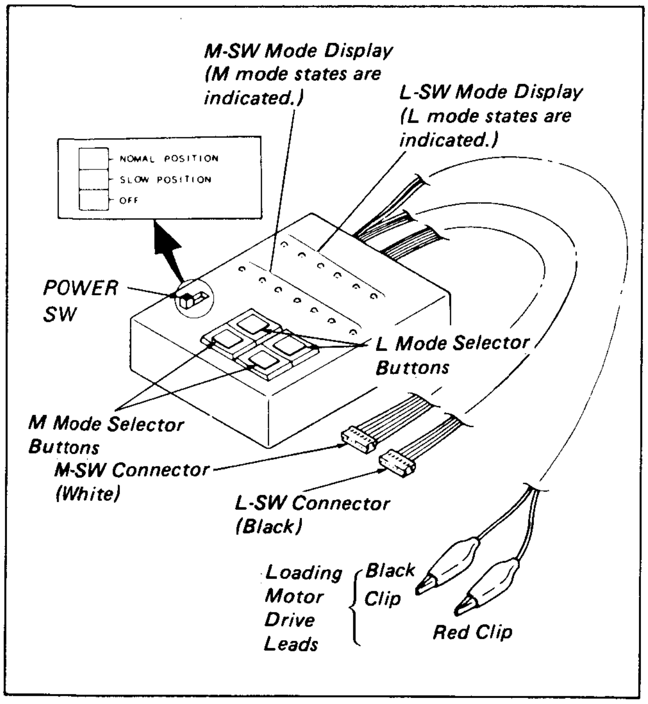

M-SW Mode Display
(M mode states are
indicated.)
L-SW Mode Display
(L mode states are
indicated.)
NOMAL POSITION
SLOW POSITION
OFF
POWER
SW
L Mode Selector
Buttons
M Mode Selector
Buttons
M-SW Connector
(White)
L-SW Connector
(Black)
Loading
Motor
Drive
Leads
Black
Clip
Red Clip

Fig. 8-3.

2. Connection

1) Plug the M-SW connector (6P connector, 6 harnesses, white) to the MS-4 Board (CN905) of the set.
2) Plug the L-SW connector (6P connector, 4 harnesses, black) to the LS-9 Board (CN904) of the set.
3) Connect each of red and black clip of the loading motor to each of red and gray loading motor drive lead wire, respectively. (See Fig. 8-3.)

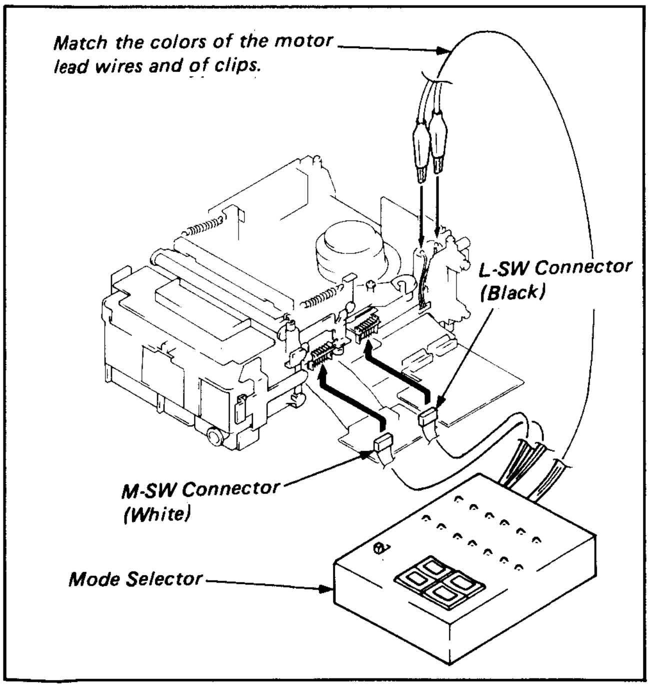

Match the colors of the motor
lead wires and of clips.
L-SW Connector
(Black)
M-SW Connector
(White)
Mode Selector

Fig. 8-4.

3. Precautions

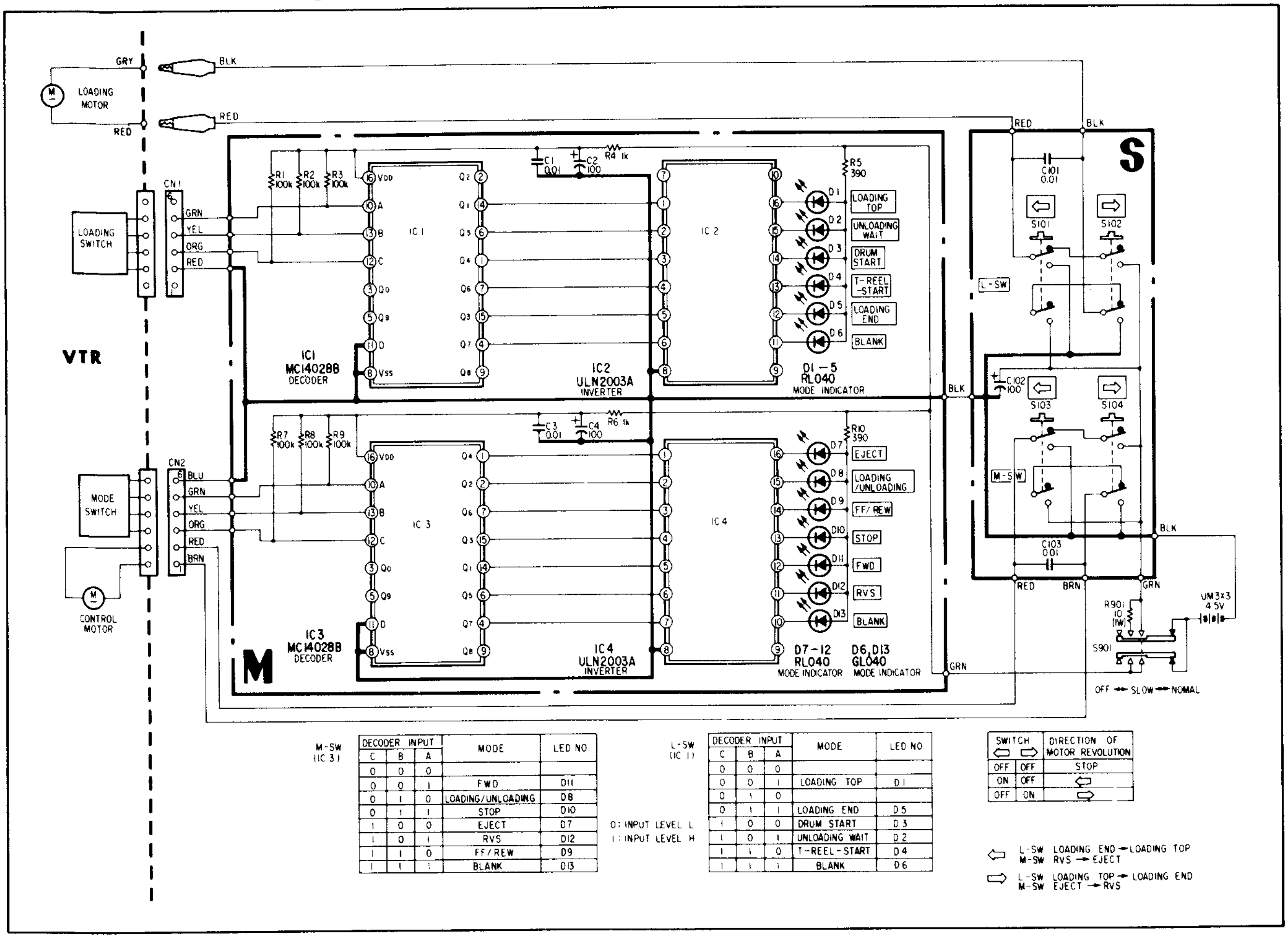
1) Make sure to set the M-SW mode to LOADING/UNLOADING when operating L-SW.
2) Make sure to set the L-SW mode to TOP or END when operating M-SW.

4. Operation

"BLANK" lights if each mode state is not set up during selection regardless of the L or M mode.

1) L Mode
   - Lighted to right sequentially from LOADING TOP to LOADING END when the righthand side button of the L mode selector buttons is kept pressing.
   - Keep pressing the selector button on the lefthand side to set up the desired mode in order to change from LOADING END to LOADING TOP.
   - The L mode operates more slowly in the slow position than in the normal position.
2) M Mode
   - Set L-SW to LOADING TOP to eject.
   - Set L-SW to LOADING END to change from FF/REW to RVS or from RVS to FF/REW.
   - Keep pressing the righthand side selector button of the M mode to light to right sequentially from EJECT to RVS.
   - Keep pressing the selector button on the lefthand side to set up the desired mode in order to change from RVS to EJECT.

5. Mode selector circuit diagram


GRY
BLK
LOADING MOTOR
RED
CN1
GRN
YEL
ORG
RED
LOADING SWITCH
VTR
R1 100k
R2 100k
R3 100k
C1 0.01
C2 100
R4 1k
R5 390
IC1 MC14028B DECODER
IC2 ULN2003A INVERTER
D1-5 RL040 MODE INDICATOR
LOADING TOP
UNLOADING WAIT
DRUM START
T-REEL -START
LOADING END
BLANK
S
C101 0.01
S101
S102
L-SW
BLK
C102 100
S103
S104
M-SW
C103 0.01
CN2
BLU
GRN
YEL
ORG
RED
BRN
MODE SWITCH
CONTROL MOTOR
R7 100k
R8 100k
R9 100k
C3 0.01
C4 100
R6 1k
R10 390
IC3 MC14028B DECODER
IC4 ULN2003A INVERTER
D7-12 RL040 MODE INDICATOR
D6,D13 GL040 MODE INDICATOR
EJECT
LOADING /UNLOADING
FF/REW
STOP
FWD
RVS
BLANK
M
RED
BRN
GRN
R901 10 [1W]
UM3×3 4.5V
S901
OFF ◄► SLOW ◄► NOMAL

M-SW (IC 3)

DECODER INPUT			MODE	LED NO
C	B	A		
0	0	0		
0	0	1	FWD	D11
0	1	0	LOADING/UNLOADING	D8
0	1	1	STOP	D10
1	0	0	EJECT	D7
1	0	1	RVS	D12
1	1	0	FF/REW	D9
1	1	1	BLANK	D13

0: INPUT LEVEL L
1: INPUT LEVEL H

L-SW (IC 1)

DECODER INPUT			MODE	LED NO.
C	B	A		
0	0	0		
0	0	1	LOADING TOP	D1
0	1	0		
0	1	1	LOADING END	D5
1	0	0	DRUM START	D3
1	0	1	UNLOADING WAIT	D2
1	1	0	T-REEL-START	D4
1	1	1	BLANK	D6

SWITCH		DIRECTION OF MOTOR REVOLUTION
⇦	⇨	
OFF	OFF	STOP
ON	OFF	⇦
OFF	ON	⇨

⇦ L-SW LOADING END → LOADING TOP
M-SW RVS → EJECT

⇨ L-SW LOADING TOP → LOADING END
M-SW EJECT → RVS

6. Mode selector parts list

Ref. No.	Part No.	Description		
		CAPACITOR		
C1	1-108-579-00	MYLAR	0.01μF	50V
C2	1-123-333-00	ELECT	100μF	24V
C3	1-108-579-00	MYLAR	0.01μF	50V
C4	1-123-333-00	ELECT	100μF	24V
C101	1-108-579-00	MYLAR	0.01μF	50V
C103	1-108-597-00	MYLAR	0.01μF	50V
		DIODE		
D1	8-179-812-31	DIODE	RL040	
D2	8-179-812-31	DIODE	RL040	
D3	8-179-812-31	DIODE	RL040	
D4	8-179-812-31	DIODE	RL040	
D5	8-179-812-31	DIODE	RL040	
D6	8-719-812-33	DIODE	GL040	
D7	8-179-812-31	DIODE	RL040	
D8	8-179-812-31	DIODE	RL040	
D9	8-179-812-31	DIODE	RL040	
D10	8-179-812-31	DIODE	RL040	
D11	8-179-812-31	DIODE	RL040	
D12	8-179-812-31	DIODE	RL040	
D13	8-719-812-33	DIODE	GL040	

Ref. No.	Part No.	Description		
		IC		
IC1	8-759-240-28	IC	TC4028BP	
IC2	8-759-120-03	IC	μPA2003A	
IC3	8-759-240-28	IC	TC4028BP	
IC4	8-759-120-03	IC	μPA2003A	
		RESISTOR		
R1	1-247-179-00	CARBON	100K	¼W
R2	1-247-179-00	CARBON	100K	¼W
R3	1-247-179-00	CARBON	100K	¼W
R4	1-247-131-00	CARBON	1K	¼W
R5	1-247-121-00	CARBON	390	¼W
R6	1-247-131-00	CARBON	1K	¼W
R7	1-247-179-00	CARBON	100K	¼W
R8	1-247-179-00	CARBON	100K	¼W
R9	1-247-179-00	CARBON	100K	¼W
R10	1-247-121-00	CARBON	390	¼W
R901	1-214-594-00	METAL	10	1W

8-2. PERIODIC CHECKING AND MAINTENANCE ITEMS

Maintenance and periodic checking should be performed as described below to demonstrate the set functions and performance fully, as well as for the sake of the machine and tapes. Provide the following maintenance work after a repair regardless of the duration of operation by the user.

8-2-1. Cleaning Rotary Drum Assembly

1) Lightly place chamois leather (Ref. No. J-2) moisted with a cleaning solution (Ref. No. J-1) on the rotary upper drum assembly and slowly rotate the rotary upper drum assembly counterclockwise by a finger to clean.

Note: Do not rotate the drum by the motor by turning on power or by rotating clockwise by a finger.
The chances of the head chip being damaged are very high if chamois leather is moved perpendicular to the head chip. Absolutely no cleaning method other than that described above should be used.

8-2-2. Tape Guide System Cleaning

1) Set up the cassette compartment assembly in an eject state and clean the tape guide system (No. 1 to 11 guides, capstan spindle and pinch roller) with chamois leather moisted with a cleaning solution. (See Fig. 8-5.)

8-2-3. Driving System Cleaning

1) Clean the drive system (timing belt and reel table surfaces) with a cloth moisted with a cleaning solution.

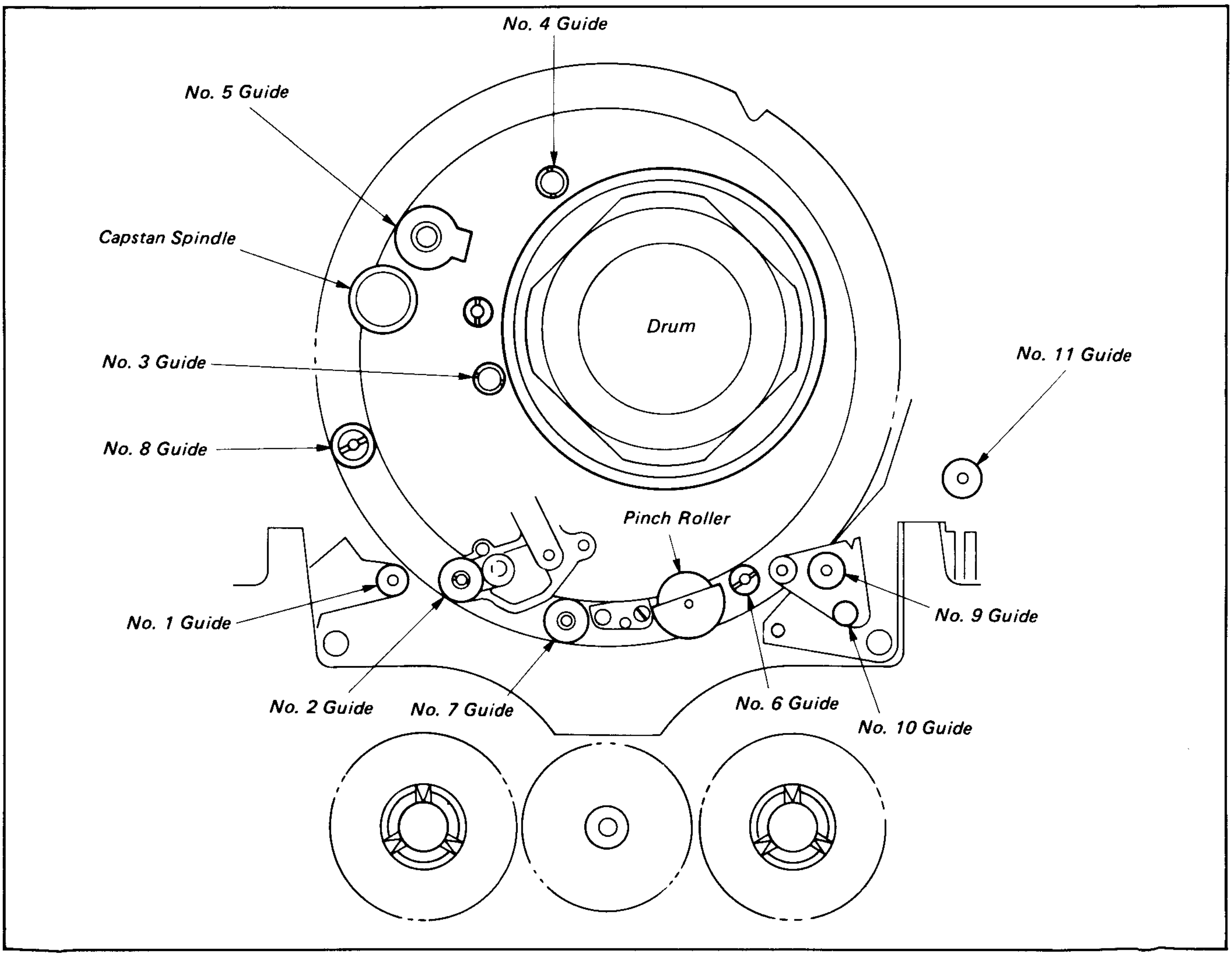

No. 4 Guide
No. 5 Guide
Capstan Spindle
No. 3 Guide
No. 8 Guide
Drum
No. 11 Guide
Pinch Roller
No. 9 Guide
No. 1 Guide
No. 2 Guide
No. 7 Guide
No. 6 Guide
No. 10 Guide

Fig. 8-5.

8-2-4. Periodic Check Items

Provide the following maintenance and checking depending on the user use duration.

○Cleaning ◎Oiling ★Replacement ☆Checking

Maintenance and Check Part		Hours in Operation (h)										Remarks
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Tape Guide System	Cleaning of tape running surfaces	○	○	○	○	○	○	○	○	○	○	Avoid oil
	Cleaning and demagnetizing of rotary drum assembly	○	○	○	○	○	○	○	○	○	○	Avoid oil
Drive System	L motor belt	○	○	○	○	○	○	○	★	○	○	3-686-546-01 Replace here, or every two years
	Timing belt	○	○	○	○	○	○	○	○	○	○	3-686-646-01
	Plunger solenoid	—	—	—	○	—	—	—	○	—	—	1-454-377-21
	Capstan bearing	—	◎	—	◎	—	◎	—	◎	—	◎	Absolutely avoid oil on tape running surfaces.
	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	A-7040-031-A
	Control motor	—	☆	—	☆	—	☆	—	☆	—	☆	8-835-110-01
Performance Checking	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD / RVS Torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

Note: Replace parts in overhaul taking the foregoing items into consideration.

Note: SONY Oil

- Be sure to use SONY oil, always. (Various kinds of trouble may occur if the oil viscosity, etc. change.)
  SONY oil: Parts No. 7-661-018-01 (Mitsubishi Diamond oil Hydrofluid EP56)
- Be sure to use SONY oil completely free from dust, etc. mixed in it when oiling the bearings. (The bearings may wear and may be seized if oil mixed with dust, etc. is used.)
- One drop of oil is approximately the amount of oil on tip of a stick 2mm in diameter as shown in the diagram. (See Fig. 8-6.)

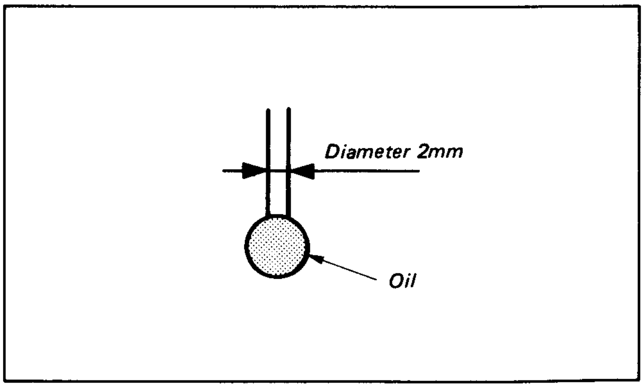


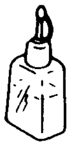
Fig. 8-6.

8-2-5. Summary of Servicing Tools

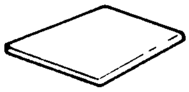
Ref. No.	Name	Part Code	Fixture No.	Use
J-1	Cleaning Fluid	Y-2031-001-0	——	
J-2	Chamois Cloth	2-034-697-00	——	
J-3	Head Demagnetizer		——	
J-4	Dental Mirror (handle) Dental Mirror (mirror)	J-6080-029-A J-6080-030-1	SL-5052	Tape Path
J-5	Alignment Tape (WR5-1N)	8-967-995-01		Tape Path
J-6	Dial Tension Gauge	J-6080-827-A		Measuring torques
J-7	Tension measuring reel	J-6080-831-A		With ϕ30 tape
J-8	Tension measuring reel	J-6080-832-A		With ϕ16 string
J-9	No. 10 gear phase matching	J-6080-823-A	GD-2047	
J-10	Rotary DRUM JIG	(Packaged with the rotary upper drum for repairs and replacement.)		
J-11	No. 6 Guide Lock JIG	J-6080-826-A		
J-12	FWD, RVS Take-up Torque Cassette	J-6080-824-A	GD-2086	
J-13	Mode Selector	J-6080-825-A		The whole
J-14	TRACK SHIFT & MONITOR JIG	J-6080-843-A		Tape path
J-15	RF/SWP Connector	J-6080-843-3		Tape path
J-16	CTL Connector	J-6080-859-A		Tape path

Other equipment: Oscilloscope
Analog Tester (20kΩ)

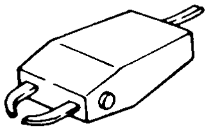
J-1



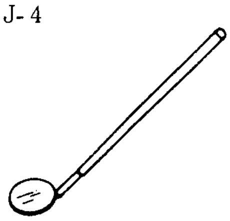
J-2



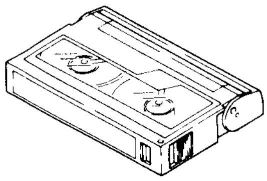
J-3



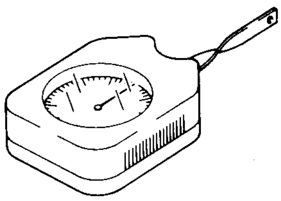
J-4



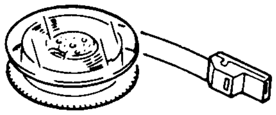
J-5



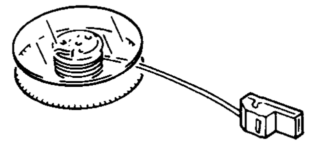
J-6



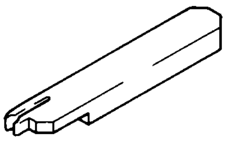
J-7



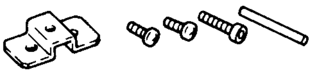
J-8



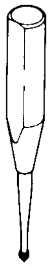
J-9



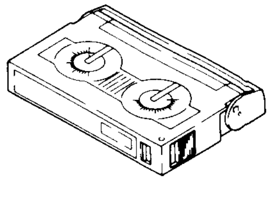
J-10
(Packaged with the rotary upper drum for repairs and replacement.)



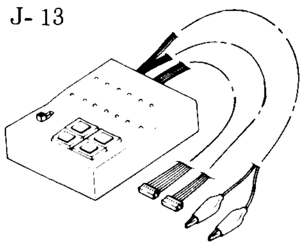
J-11



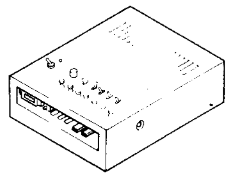
J-12



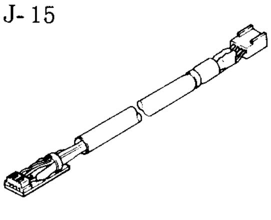
J-13



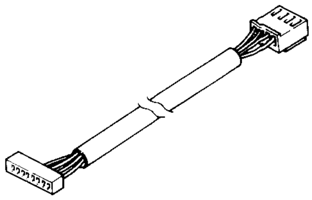
J-14



J-15



J-16



8-3. MECHANISM SECTION CHECKING, ADJUSTMENT AND REPLACEMENT

Note:
- Use a mode selector (Ref. No. J-13) to check, adjust, and replace this mechanism section.
- The modes in ☐ are set up by pressing the mode selector buttons.

8-3-1. S Reel Table Assembly

1. Removal

1) Remove the cassette compartment assembly as instructed in Section 2, 2-11.
2) Set up the FF/REW mode.
3) Remove the screw ❶ and reel table stopper ❷ .
4) Remove the REV brake ❸ .
5) Remove the S reel table assembly ❹. (See Fig. 8-7.)

Note: Be sure to hold the upper click part in hand when removing. (See the Note in Fig. 8-7.)

2. Remounting

1) Oil half a drop of oil on the upper spherical part of the spindle ❺ .
2) Move the S main brake assembly ❻ toward the arrow .
3) Remount the S reel table assembly ❹ not to touch the tension regulator band assembly ❼ .

Note: Be sure to hold the upper click part in hand when mounting. (See the Note in Fig. 8-7.)

4) Remount the REV brake ❸ .
5) Remount the reel table stopper ❷ and tighten the screw ❶. (See Fig. 8-7.)
6) Set up the LOADING/UNLOADING mode.
7) Remount the cassette compartment assembly as instructed in 8-1-1.
8) Perform FWD back tension adjustment of 8-3-21.

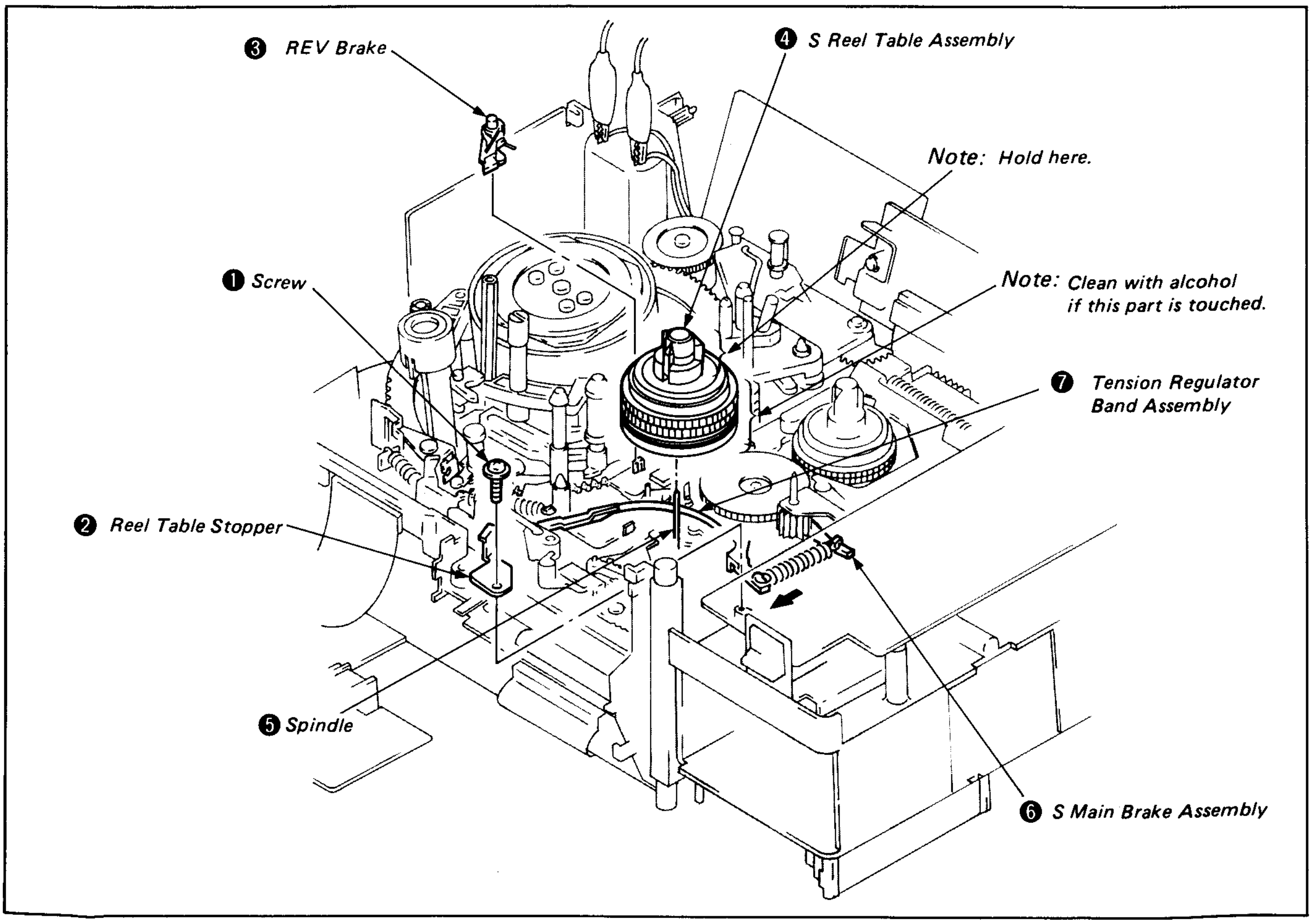

❸ REV Brake
❹ S Reel Table Assembly
Note: Hold here.
❶ Screw
Note: Clean with alcohol if this part is touched.
❼ Tension Regulator Band Assembly
❷ Reel Table Stopper
❺ Spindle
❻ S Main Brake Assembly

Fig. 8-7.

8-3-2. T Reel Table Assembly

1. Removal

1) Remove the cassette compartment assembly as instructed in Section 2, 2-11.
2) Set up the UNLOADING WAIT mode.
3) Hook the spring ❷ tying the T soft brake ❶ on the click of the lock slider.
4) Remove the stopper washer ❸ and T soft brake ❶ .
5) Set up the EJECT mode.
6) Move the drive gear (B) ❹ toward the arrow .
7) Remove the T reel table assembly ❺. (See Fig. 8-8.)

Note: Be sure to hold the upper click part in hand when removing. (See the Note in Fig. 8-7.)

2. Remounting

1) Oil half a drop of oil on the upper spherical part of the spindle ❻ .
2) Move the drive gear (B) ❹ toward the arrow.
   (Check that the EJECT mode is set up.)
3) Remount the T reel table assembly ❺ .
4) Remount the T soft brake ❶ and stop washer ❸ .
5) Rehook the spring ❷ on the click of the T soft brake ❶ . (See Fig. 8-8.)
6) Set up the LOADING TOP and LOADING/UNLOADING modes.
7) Remount the cassette compartment assembly as instructed in 8-1-1.

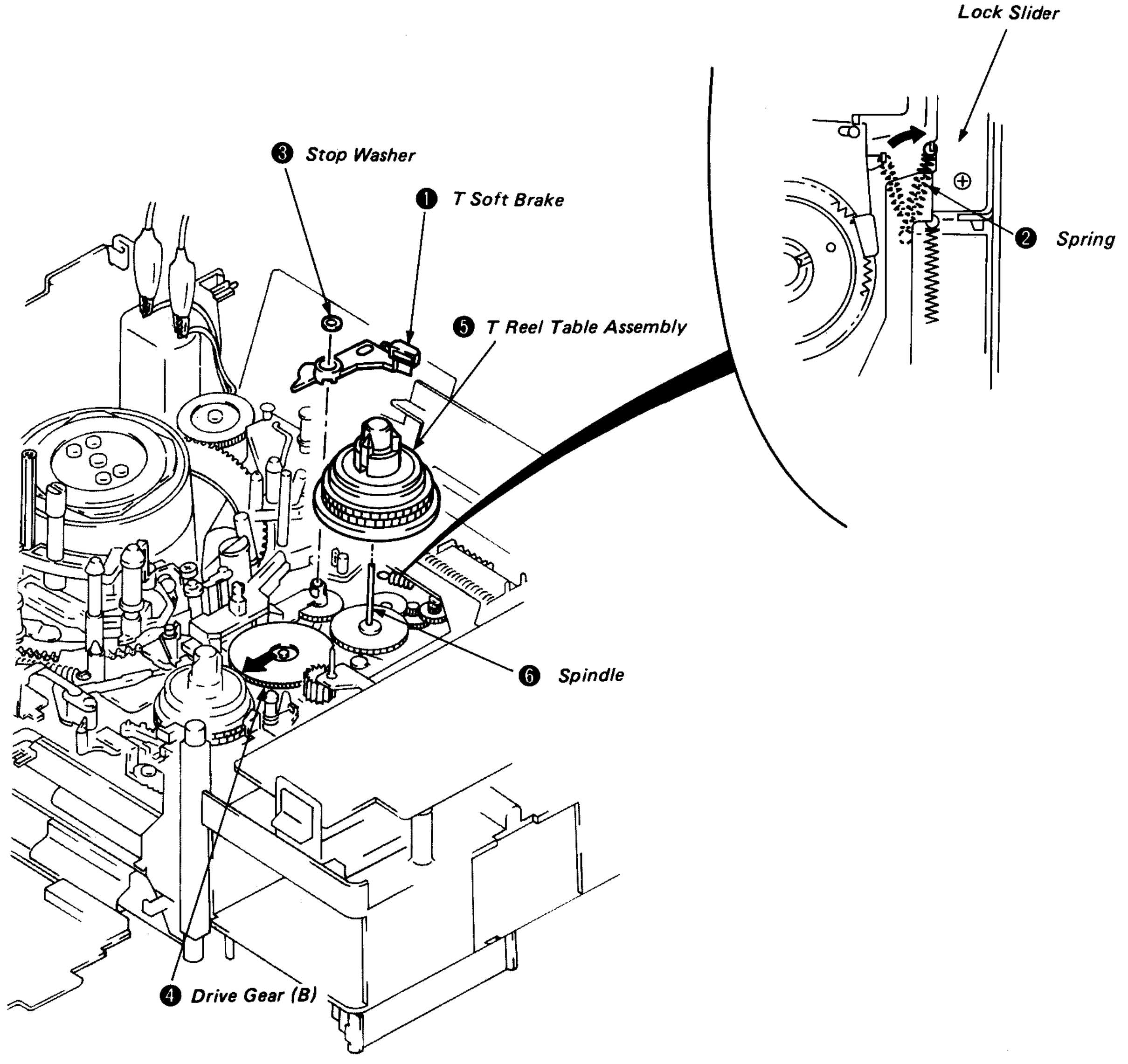


Fig. 8-8.

8-3-3. Pinch Pressure Arm Assembly

1. Removal

1) Hook the spring ❶ on the pinch press arm assembly ❷ .
2) Remove the stop washer ❸ and pinch press arm assembly ❷. (See Fig. 8-9.)

2. Remounting

1) Oil half a drop of oil on the spindle ❹ .
2) Remount the pinch press arm assembly ❷ and stop washer ❸ .
3) Rehook the spring ❶ on the tension regulator spring hook assembly ❺ . (See Fig. 8-9.)

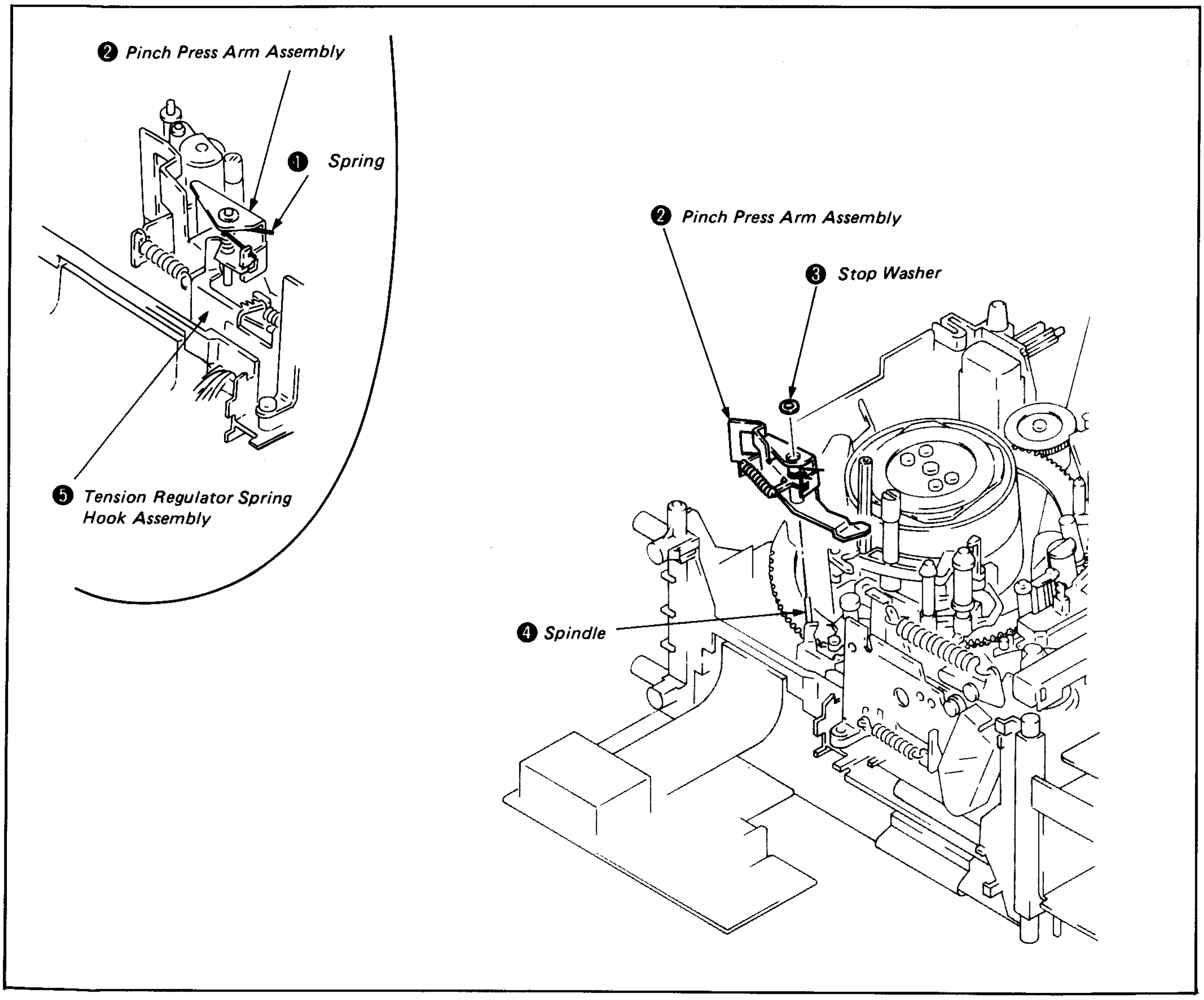

❷ Pinch Press Arm Assembly
❶ Spring
❺ Tension Regulator Spring Hook Assembly
❷ Pinch Press Arm Assembly
❸ Stop Washer
❹ Spindle

Fig. 8-9.

8-3-4. Tension Regulator Arm Assembly

1. Removal

1) Remove the cassette compartment assembly as instructed in Section 2, 2-11.
2) Change the hooking position of the spring as instructed in 1) of Removal in 1. of 8-3-3.
3) Remove the spring ❶ . (Write down the spring hooking position).
4) Remove the screw ❷ and tension regulator spring hook assembly ❸ .
5) Set up the FF/REW mode.
6) Disengage the click ❹ of the tension regulator band assembly.
7) Remove the tension regulator arm assembly ❺ . (See Fig. 8-10.)

2. Remounting

1) Oil half a drop of oil on the spindle ❻ .
2) Remount the tension regulator arm assembly ❺ inserting the tension regulator load arm assembly pin ❼ in the cam groove on the rear side of the tension regulator arm assembly ❺ .
3) Reengage the tension regulator band assembly click ❹ . (Do not touch or deform the band.)
4) Set up the LOADING/UNLOADING mode.
5) Remount the tension regulator spring hook assembly ❸ and tighten the screw ❷ .
6) Rehook the spring ❶ in the previous position and lock the screw. (See Fig. 8-10.)
7) Rehook the spring as instructed in 3) of Remounting in 2. of 8-3-3.
8) Remount the cassette compartment assembly as instructed in 8-1-1.

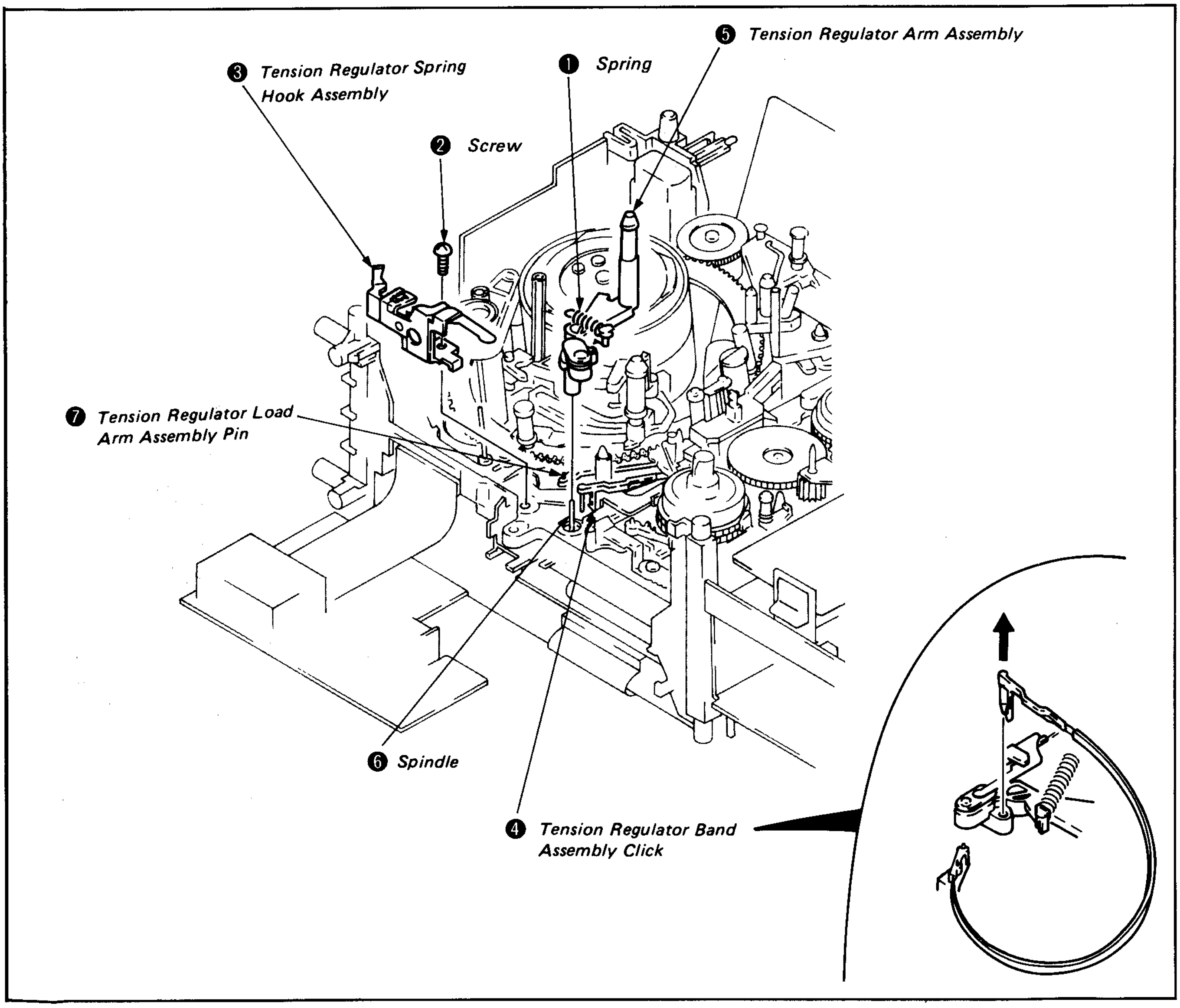

❺ Tension Regulator Arm Assembly
❸ Tension Regulator Spring Hook Assembly
❶ Spring
❷ Screw
❼ Tension Regulator Load Arm Assembly Pin
❻ Spindle
❹ Tension Regulator Band Assembly Click

Fig. 8-10.

8-3-5. Tension Regulator Band Assembly

1. Removal

1) Remove the S reel table assembly as instructed in 8-3-1.
2) Disengage the band arm assembly click ❶.
3) Disengage the click ❷ and remove the tension regulator band assembly ❸. (See Fig. 8-11.)

2. Remounting

1) Remount the tension regulator band assembly ❸. (Do not touch or deform the band.)
2) Reengage the band arm assembly click ❶. (See Fig. 8-11.)
3) Remount the S reel table assembly as instructed in 8-3-1.
4) Adjust the FWD back tension as instructed in 8-3-21.

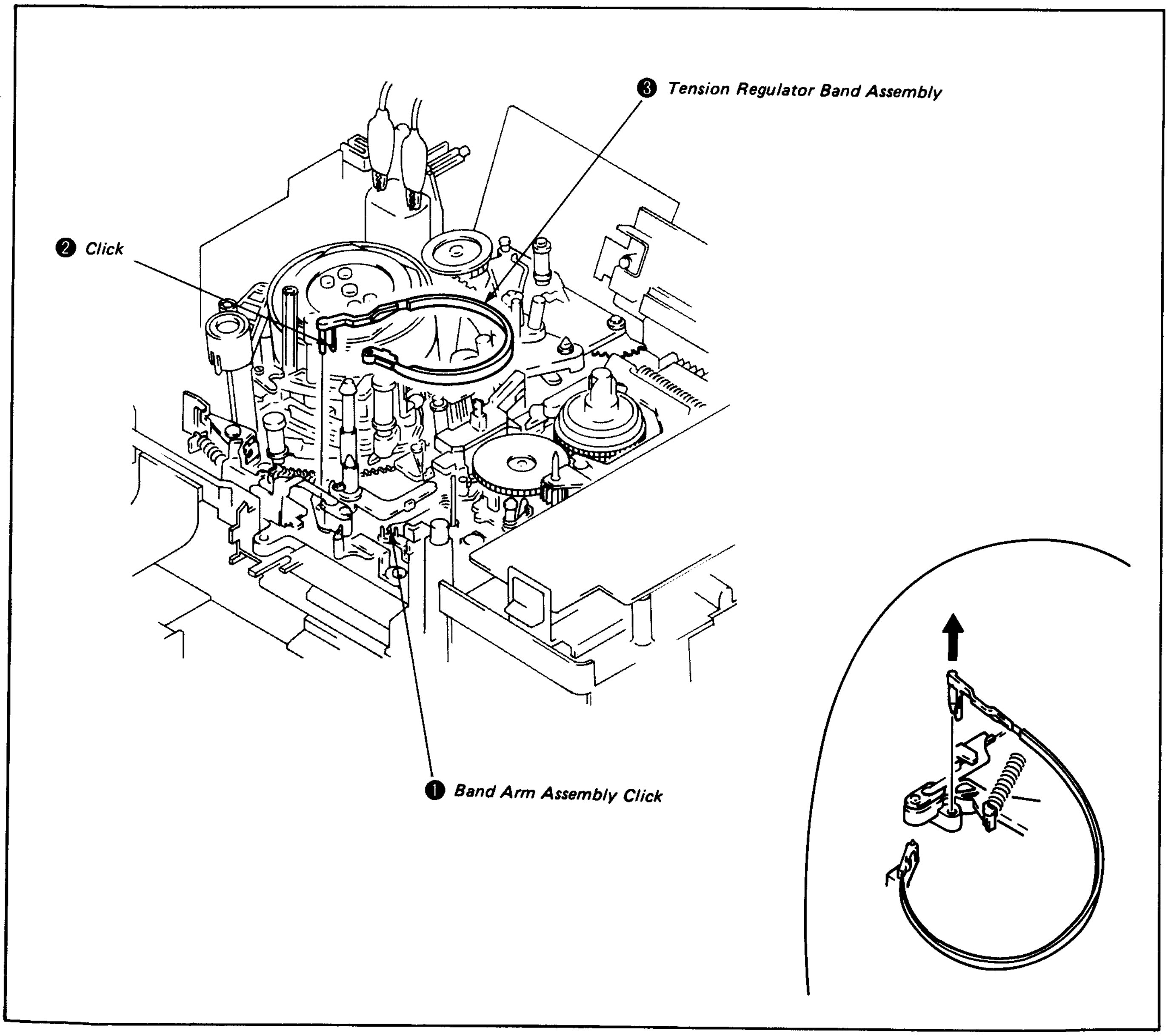

❸ Tension Regulator Band Assembly
❷ Click
❶ Band Arm Assembly Click

Fig. 8-11.

8-3-6. Loading Motor Assembly

1. Removal

1) Open the SS-64 Board as instructed in Section 2, 2-13.
2) Remove the L motor belt ❶.
3) Disconnect the connector ❷ CN302 (white) 2P from the RS-18 Board.
4) Remove the two screws ❸ and loading motor assembly ❹. (See Fig. 8-12.)

2. Remounting

1) Remount the loading motor assembly ❹ and tighten the two screws ❸.
2) Reconnect the connector ❷ CN302 (white) 2P to the RS-18 board.
3) Remount the L motor belt ❶. (See Fig. 8-12.)
4) Reassemble the circuit boards reversing the sequence.

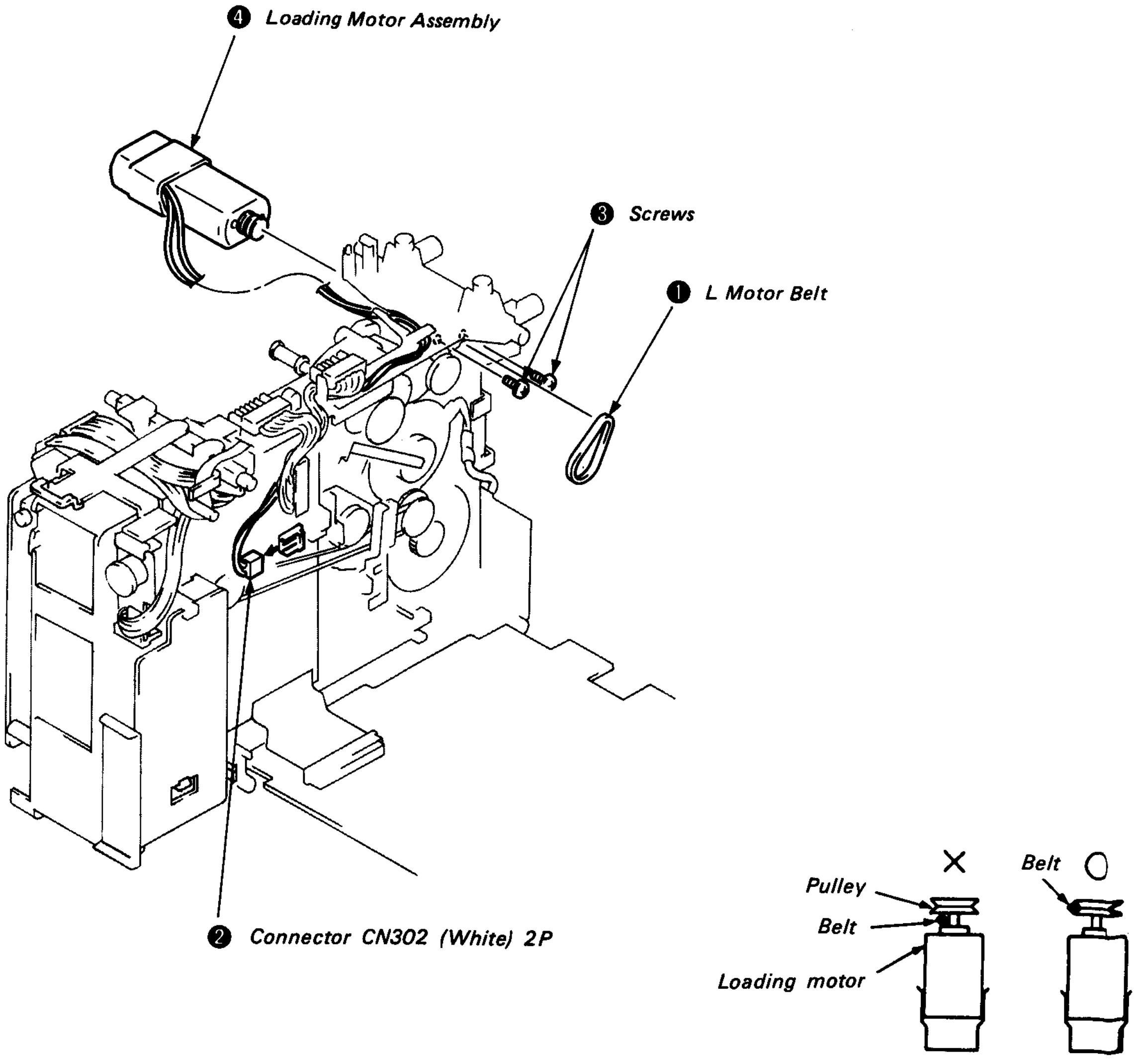

❹ Loading Motor Assembly
❸ Screws
❶ L Motor Belt
❷ Connector CN302 (White) 2P
×
Belt ○
Pulley
Belt
Loading motor

Fig. 8-12.

8-3-7. Loading Ring Assembly

1. Removal

1) Operate the mode selectors to move the guide base assembly ❶ to immediately before the lock and the No. 2 guide ❷ to the position where the screw of the ring stopper ❸ immediately before the lock. (Do not move the loading ring assembly ⓫ .)
2) Remove the stop washer ❹ and disengage the No. 10 gear assembly ❺ .
3) Remove the screw ❻ , roller retainer ❼ and roller ❽ .
4) Remove the two screws ❾ , ring stopper ❸ and roller ❿ .
5) Remove the loading ring assembly ⓫ in the arrow direction. (See Fig. 8-13.)

Note: Care should be taken not to strike the drum when removing the loading ring assembly ⓫ .

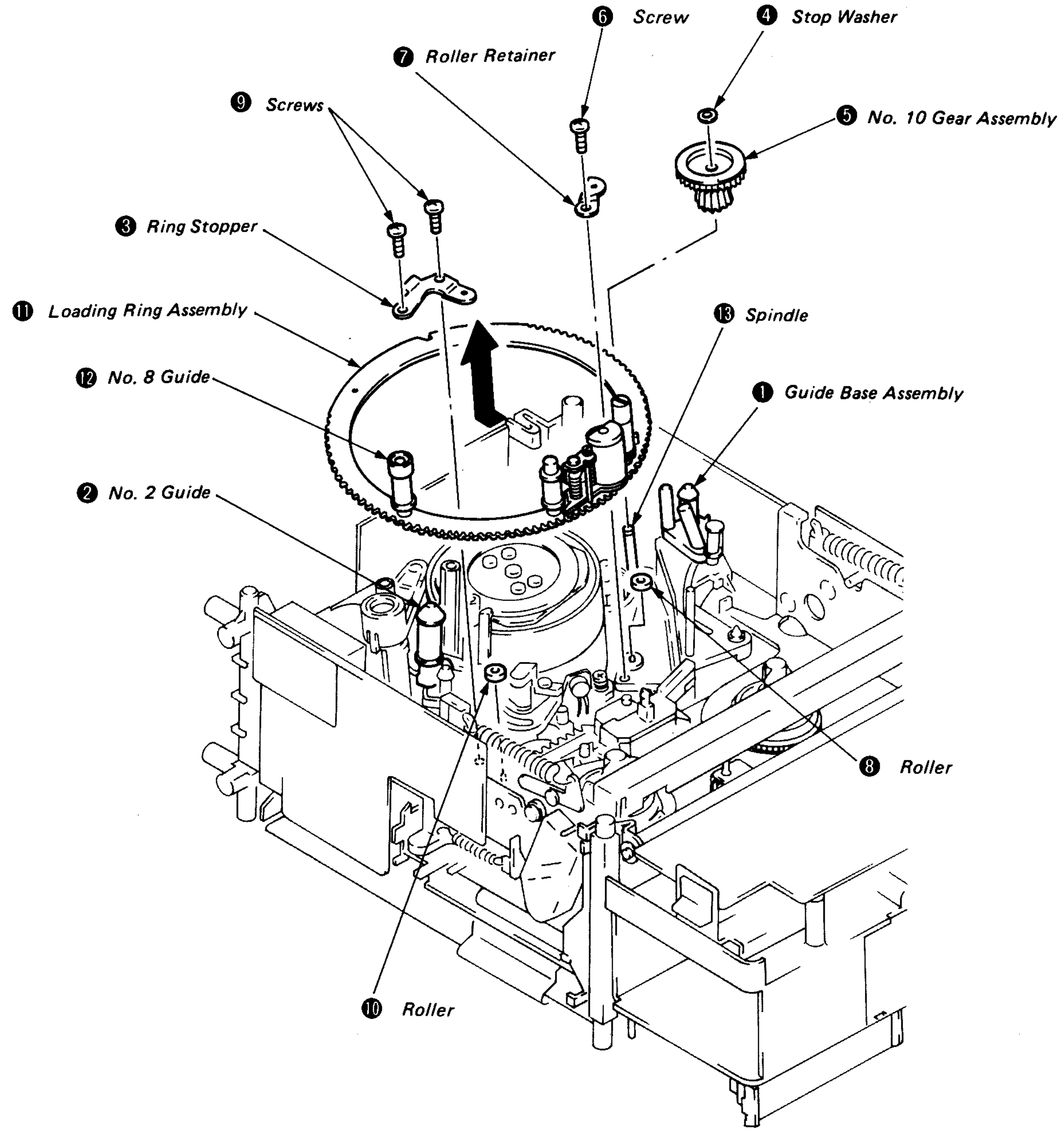

❻ Screw
❹ Stop Washer
❼ Roller Retainer
❾ Screws
❺ No. 10 Gear Assembly
❸ Ring Stopper
⓫ Loading Ring Assembly
⓭ Spindle
⓬ No. 8 Guide
❶ Guide Base Assembly
❷ No. 2 Guide
❽ Roller
❿ Roller

Fig. 8-13.

2. Remounting

1) Remount the loading ring assembly ⓫ in an unthreading condition (with the pinch roller moved to the camera section side). (Check that the loading ring assembly is in the condition of 1) of Removal.)
2) Remount the roller ❿ and ring stopper ❸ and tighten the two screws ❾ . (The No. 8 guide ⓬ should be located near the control panel than the ring stopper ❸ .)
3) Remount the roller ❽ and roller retainer ❼ and tighten the screw ❻ . (Check that the loading ring assembly fits the three rollers.)
4) Oil half a drop of oil on the spindle ⓭ . (See Fig. 8-13.)
5) Check that the tooth of the drive changer is engaging the dent of the L-SW assembly and plug the No. 10 gear phase alignment jig (Ref. No. J-9) (See Fig. 8-14.)
6) Remount the No. 10 gear ❺ and stop washer ❹ pressing the No. 8 guide ⓬ to the ring stopper ❸ .
7) Pull out the No. 10 gear phase alignment jig.
8) Set up the LOADING TOP mode.

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

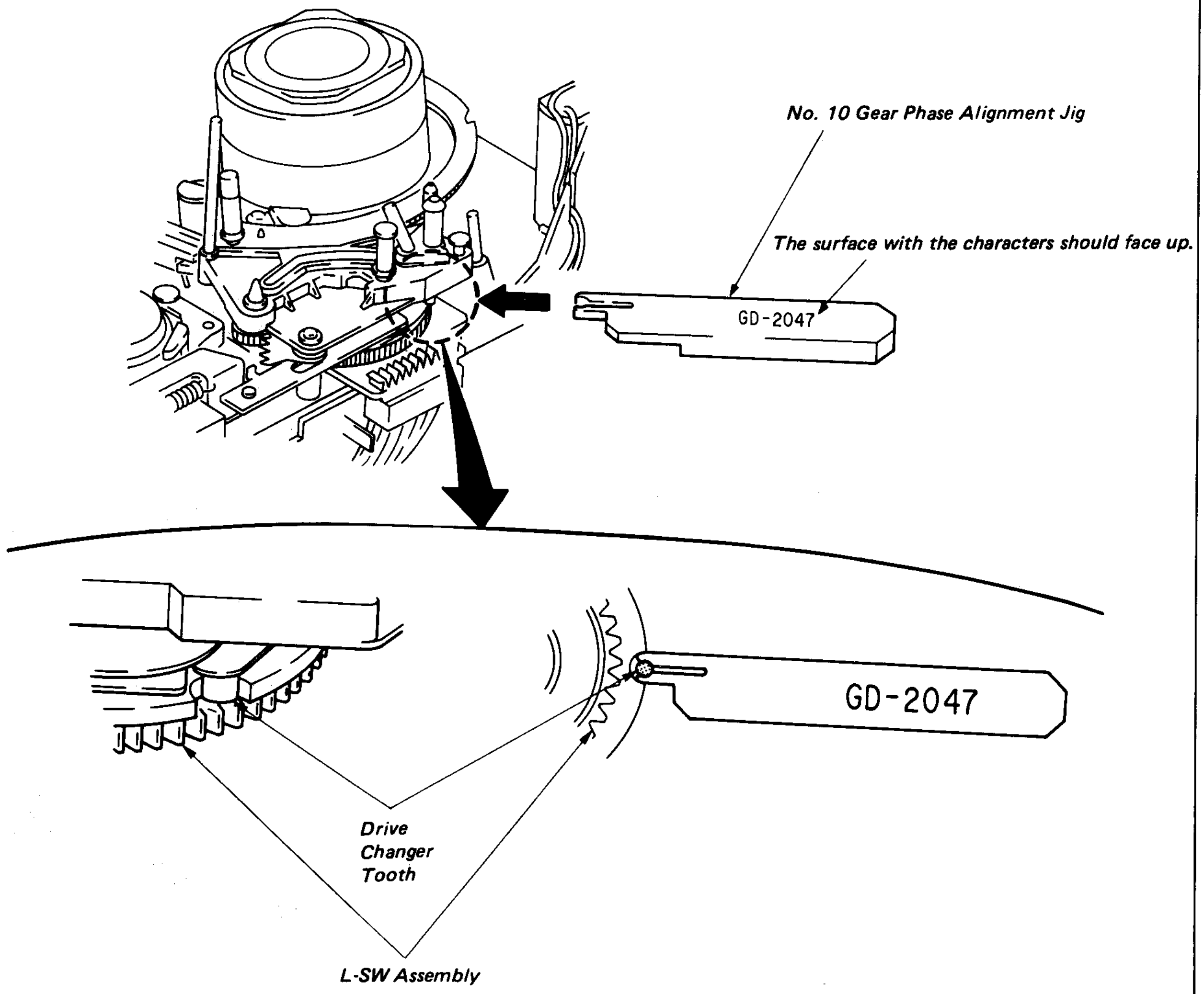

No. 10 Gear Phase Alignment Jig
The surface with the characters should face up.
GD-2047
GD-2047
Drive Changer Tooth
L-SW Assembly

Fig. 8-14.

8-3-8. Pinch Roller Assembly

1. Removal

1) Remove the loading ring assembly as instructed in 8-3-7.
2) Remove the stop washer ❶. (See Fig. 8-15.)
3) Change the hooking position of the spring ❸ on the No. 7 guide assembly ❷. (See Fig. 8-16.)
4) Rotate the pinch roller assembly ❹ in the arrow direction. (See Fig. 8-17.)
5) Remove the pinch roller assembly ❹ toward the arrow. (See Fig. 8-18.)
6) Remove the spring ❸. (See Fig. 8-19.)

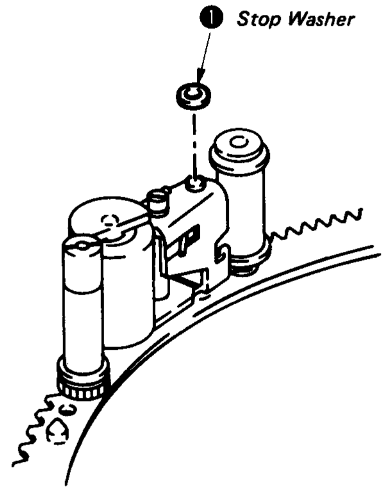

❶ Stop Washer

Fig. 8-15.

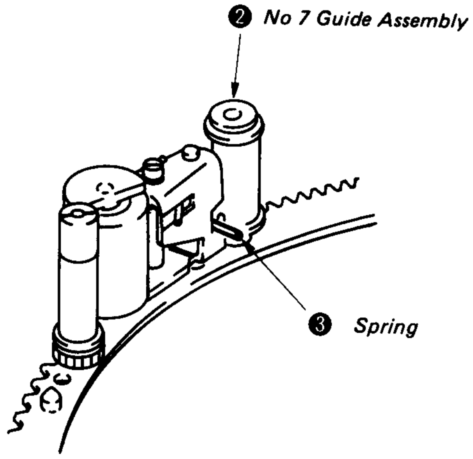

❷ No 7 Guide Assembly
❸ Spring

Fig. 8-16.

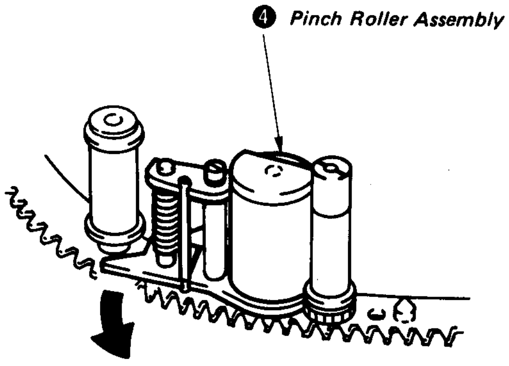

❹ Pinch Roller Assembly

Fig. 8-17.

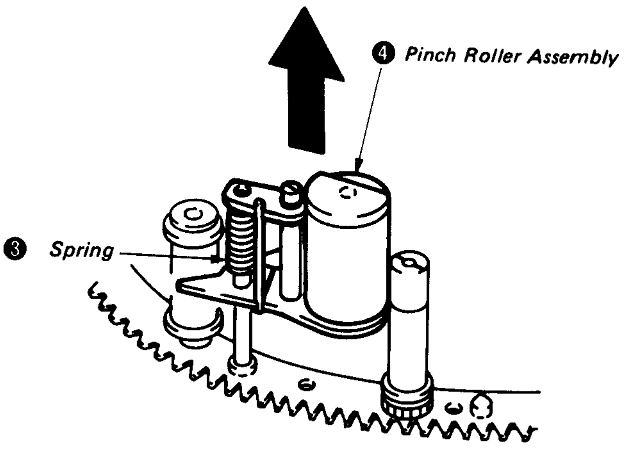

❹ Pinch Roller Assembly
❸ Spring

Fig. 8-18.

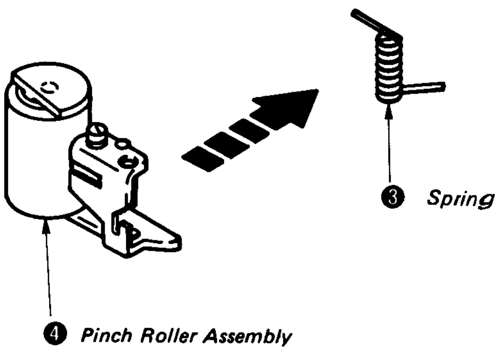

❸ Spring
❹ Pinch Roller Assembly

Fig. 8-19.

2. Remounting

1) Rehook the spring ❸. (See Fig. 8-20.)
2) Reinsert a thin object like a clip ❺ into the pinch roller assembly hole ❻. (See Fig. 8-21 and 22.)
3) Recontact the loading ring assembly spindle ❼ with the tip of the clip ❺ and fit the pinch roller assembly ❹. (See Fig. 8-23 and 24.)
4) Rehook the spring on the No. 7 guide assembly ❷. Confirm that the spring is hooked to part Ⓐ at this time. (See Fig. 8-25.)
5) Remount the stop washer ❶. (See Fig. 8-26.)
6) Remount the loading ring assembly as instructed in 8-3-7.

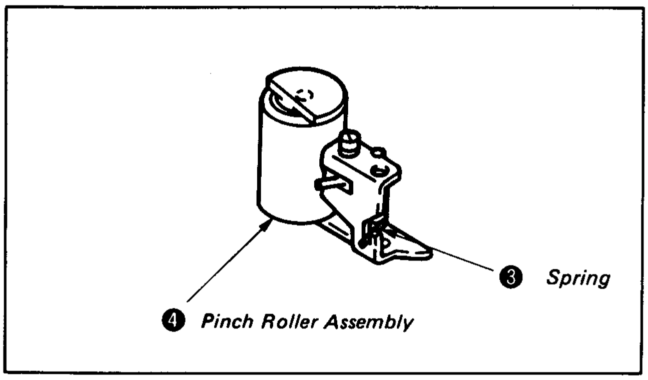

❸ Spring
❹ Pinch Roller Assembly

Fig. 8-20.

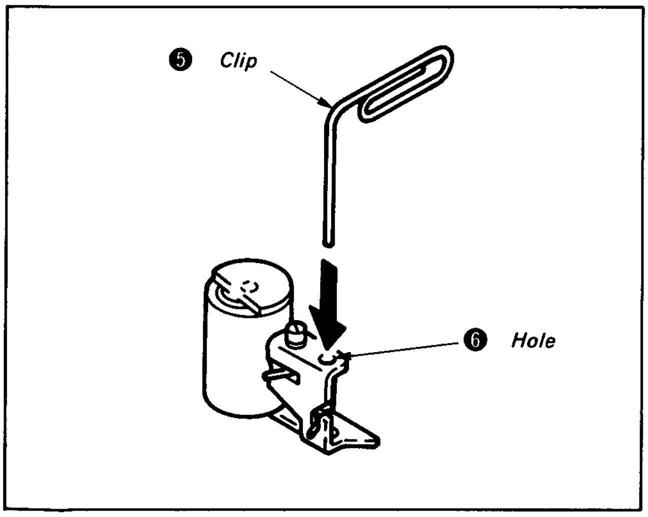

❺ Clip
❻ Hole

Fig. 8-21.

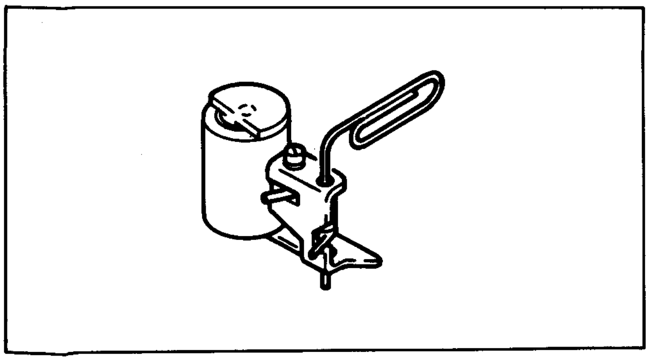


Fig. 8-22.

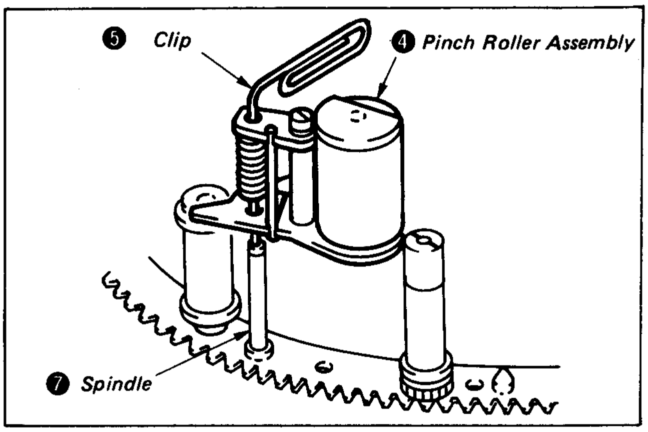

❺ Clip
❹ Pinch Roller Assembly
❼ Spindle

Fig. 8-23.

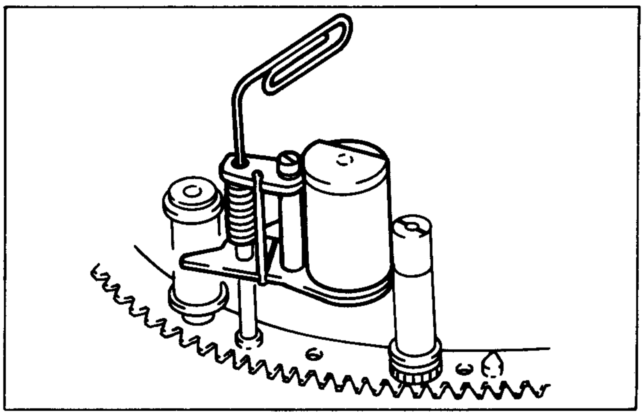


Fig. 8-24.

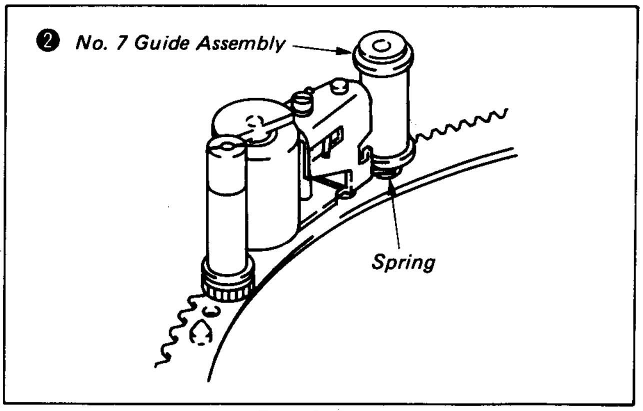

❷ No. 7 Guide Assembly
Spring

Fig. 8-25.

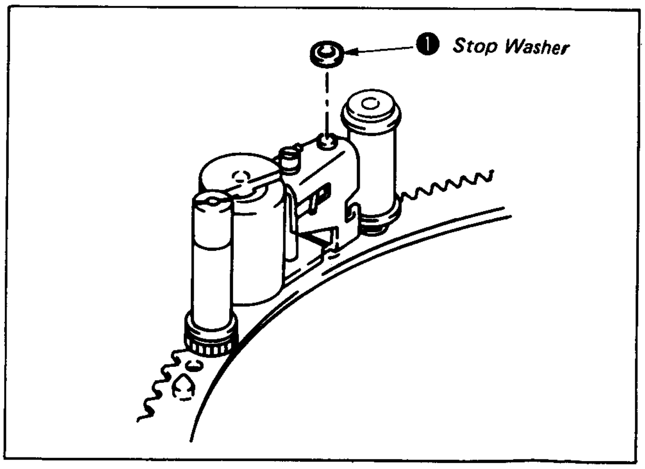

❶ Stop Washer

Fig. 8-26.

8-3-9. Slant Guide Chassis Assembly

1. Removal

1) Set up the EJECT mode and raise the cassette compartment asembly.
2) Remove the loading ring assembly as instructed in 8-3-7.
3) Remove the screw ❶ and E ring ❷ .
4) Remove the slant guide chassis assembly ❸ . (See Fig. 8-27.)

2. Remounting

1) Operate the mode selector and align the righthand edge of the L slider and that of the lock slider. (See Fig. 8-28.)
2) Set the guide base assembly of the slant guide chassis assembly in an unthreading condition (with the guide base assembly moved to the Camera section side) and remount it. (See Fig. 8-29.)
   Check the meshing position of the slant guide drive gear and the L slider assembly gear at this time.
3) Refit the E ring ❷ and tighten the screw ❶ . (See Fig. 8-27.)
4) Set to Condition 1) of 1. Remounting in 8-3-7.
5) Remount the loading ring assembly as instructed in 8-3-7.
6) Lower the cassette compartment assembly.

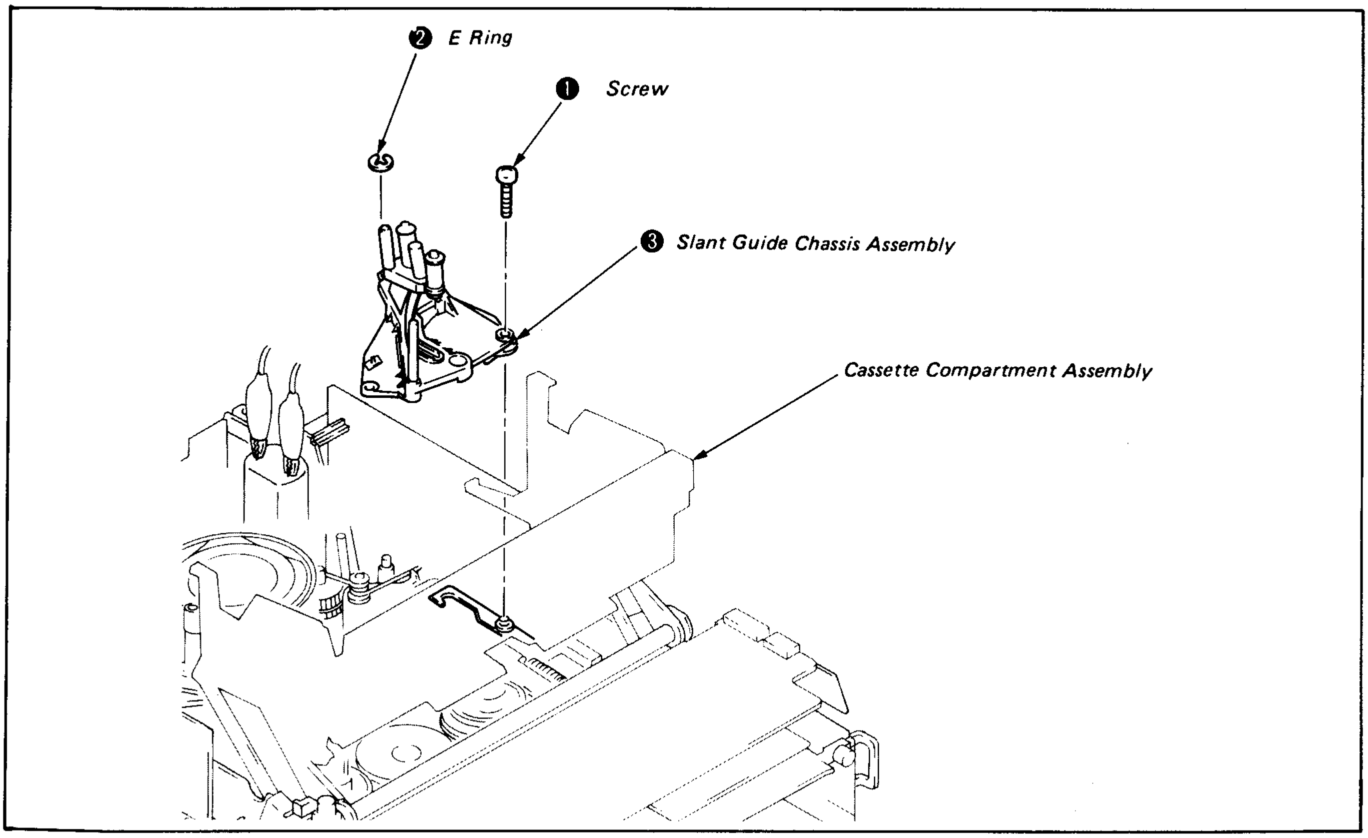

❷ E Ring
❶ Screw
❸ Slant Guide Chassis Assembly
Cassette Compartment Assembly

Fig. 8-27.

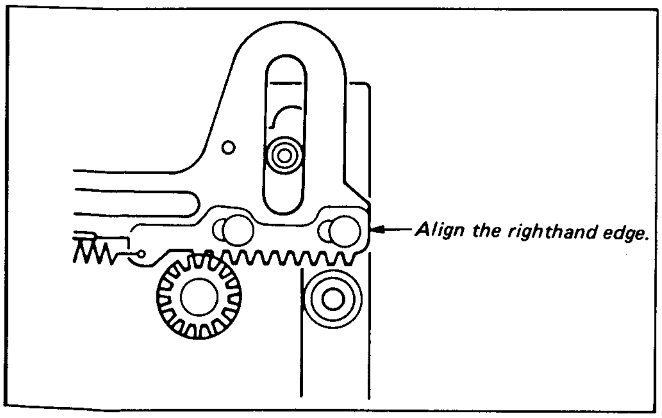

Align the righthand edge.

Fig. 8-28.

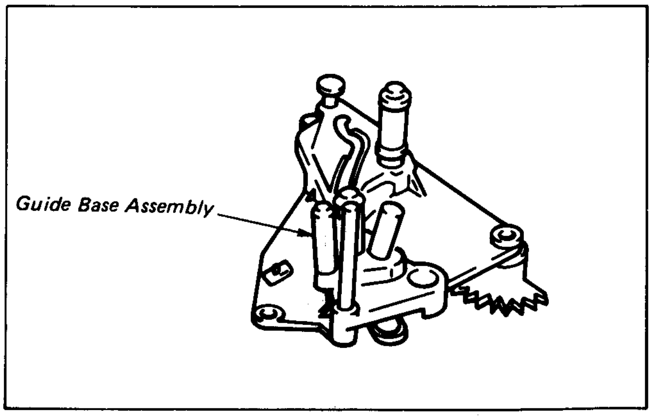

Guide Base Assembly

Fig. 8-29.

8-3-10. No.2 Guide Assembly

1. Removal

1) Release and remove claw of tape stopper ❶.
2) Rotate the rotary upper drum counterclockwise so that the head does not contact.
3) Remove the drum guard screw ❷.
4) Remove the screw ❸.
5) Remove the guide nut ❹ of the No. 3 guide, as well as the guide flange ❺, guide ❻ and compression spring ❼.
6) Remove the No. 2 guide assembly ❽. (See Fig. 8-30.)

2. Remounting

1) Confirm that it is in the LOADING TOP mode.
2) Mesh the toothless part Ⓐ of the toothed wheel under the No. 2 guide assembly (entrance guide (P) assembly) and that Ⓑ of the L slider.
3) Remount the compression spring ❼, guide ❻, and guide flange ❺ in this order and tighten the guide nut ❹ temporarily.
4) Tighten the screw ❸.
5) Tighten the drum guard screw ❷.
6) Refit the tape stopper ❶. (See Fig. 8-30.)
7) Perform FWD back tension adjustment of 8-3-21.

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

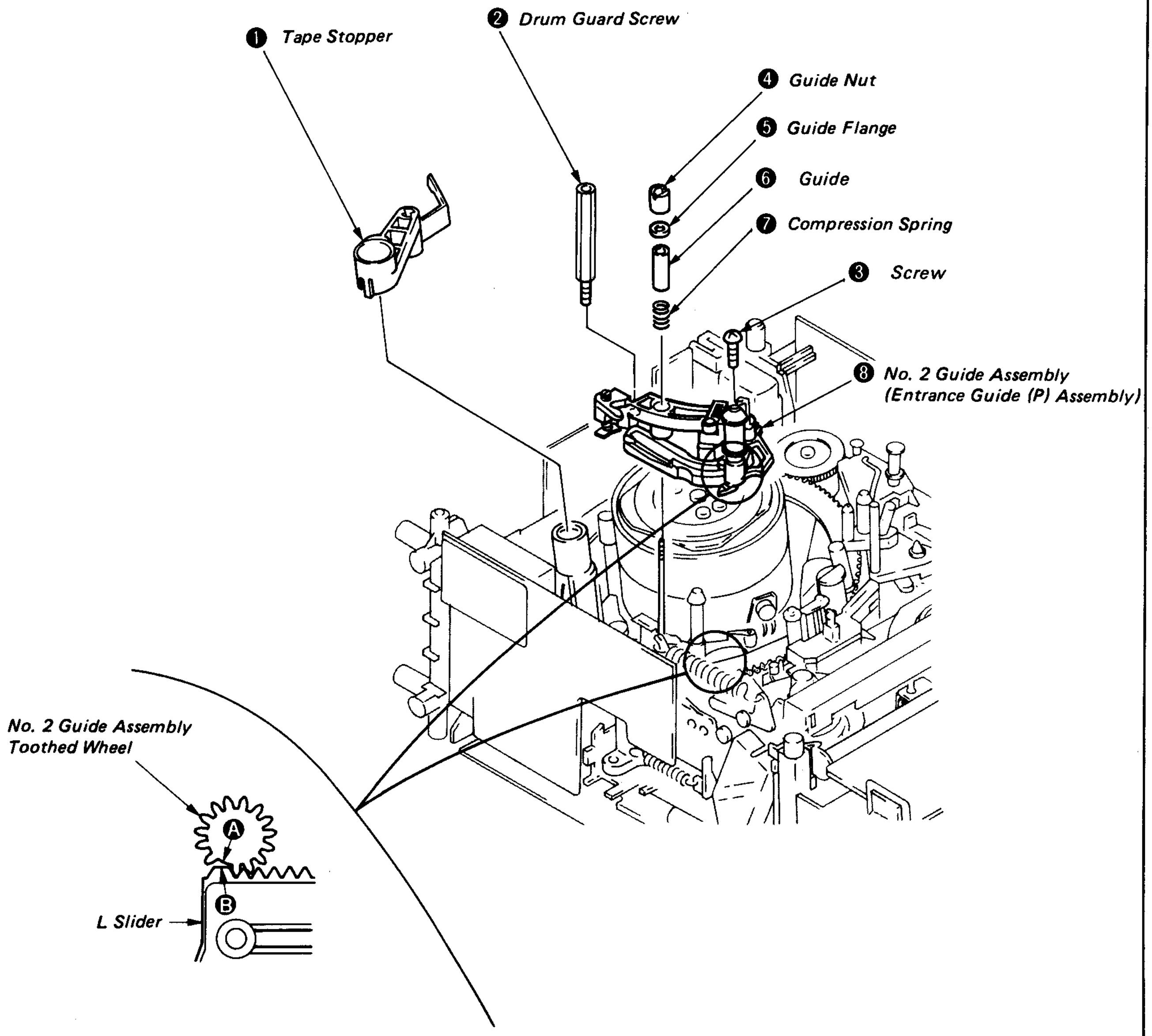

❶ Tape Stopper
❷ Drum Guard Screw
❹ Guide Nut
❺ Guide Flange
❻ Guide
❼ Compression Spring
❸ Screw
❽ No. 2 Guide Assembly (Entrance Guide (P) Assembly)
No. 2 Guide Assembly Toothed Wheel
Ⓐ
Ⓑ
L Slider

Fig. 8-30.

8-3-11. L Slider Assembly

1. Removal

1) Remove the slant guide chassis assembly as instructed in 8-3-9.
2) Remove the No. 2 guide assembly (entrance guide (P) assembly) as instructed in 8-3-10.
3) Set up the DRUM START mode.
4) Remove the slant guide drive gear ❶ .
5) Remove the pin of the tension regulator load arm assembly ❷ from the cam groove of the tension regulator arm assembly. (Refer to 8-3-4 Tension regulator arm assembly.)
6) Remove the two stopper washers ❸ .
7) Remove the L slider assembly ❺ push the RL arm assembly lug ❹ toward the arrow .
8) Remove the stopper washer ❻ and tension regulator load arm assembly ❷ . (See Fig. 8-31.)

2. Remounting

1) Grease the parts. (See Fig. 8-32.)
2) Remount the tension regulator load arm assembly ❷ and stop washer ❻ . (See Fig. 8-31.)
3) Remount the L slider assembly ❺ pushing the RL arm assembly lug ❹ toward the arrow .
4) Refit the two stop washers ❸ .
5) Reinsert the pin of the tension regulator load arm assembly ❷ into the groove of the M slider. (Refer to 8-3-15 M Slider.)
6) Reinsert the pin of the tension regulator load arm assembly ❷ in the cam groove of the tension regulator arm assembly referring to 2) of 2. Remounting in 8-3-4. (Refer to 8-3-4 Tension regulator arm assembly.)
7) Operate the mode selector and align the righthand edges of the L slider and lock slider. (Refer to 1) of 2. Remounting in 8-3-9.)
8) Mesh the notch of the alant guido drive gear ❶ with the tooth at the left edge of the L. slider assembly shiding one tooth while taking note to the upper and lower parts of the slant guide drive gear ❶ . (See Fig. 8-33.)
9) Remount the No. 2 guide assembly in accordance with 8-3-10.
10) Remount the slant guide chassis assembly as instructed in 8-3-9.

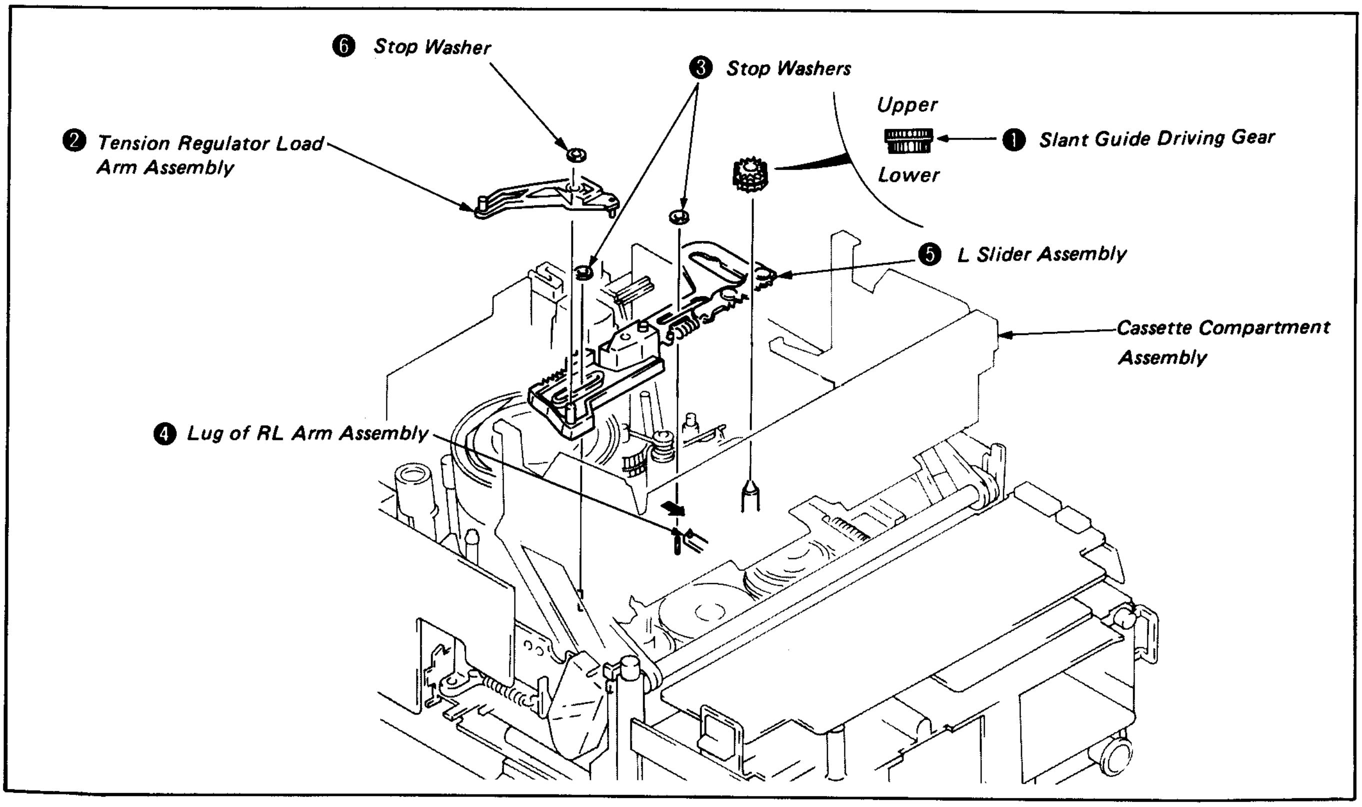

❻ Stop Washer
❸ Stop Washers
Upper
❶ Slant Guide Driving Gear
Lower
❷ Tension Regulator Load Arm Assembly
❺ L Slider Assembly
Cassette Compartment Assembly
❹ Lug of RL Arm Assembly

Fig. 8-31.

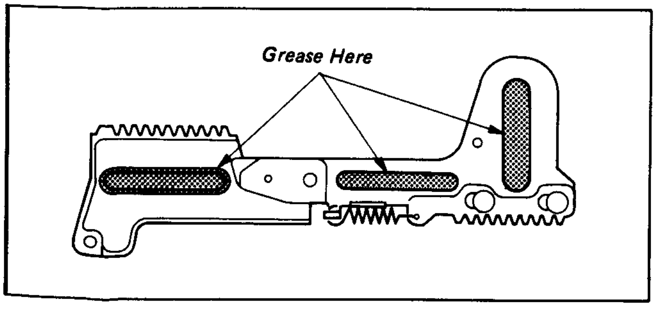

Grease Here

Fig. 8-32.

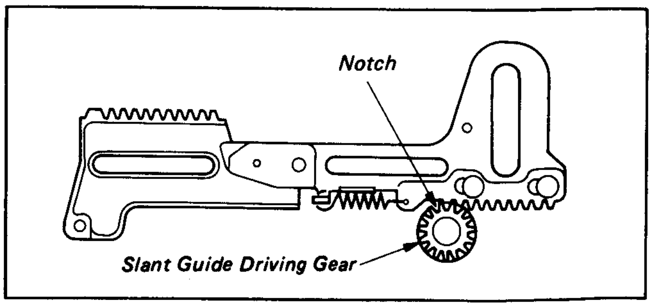

Notch
Slant Guide Driving Gear

Fig. 8-33.

8-3-12. L-SW Assembly

1. Removal

1) Remove the L slider assembly as instructed in 8-3-11.
2) Remove the lock slider retainer ① .
3) Remove the screw ② and lock slider ③ .
4) Remove the stop washer ④ and spring ⑤ .
5) Remove the drive changer assembly ⑥ .
6) Remove the connector ⑦ .
7) Remove two screws ⑧ and L-SW assembly ⑨ . (See Fig. 8-34.)

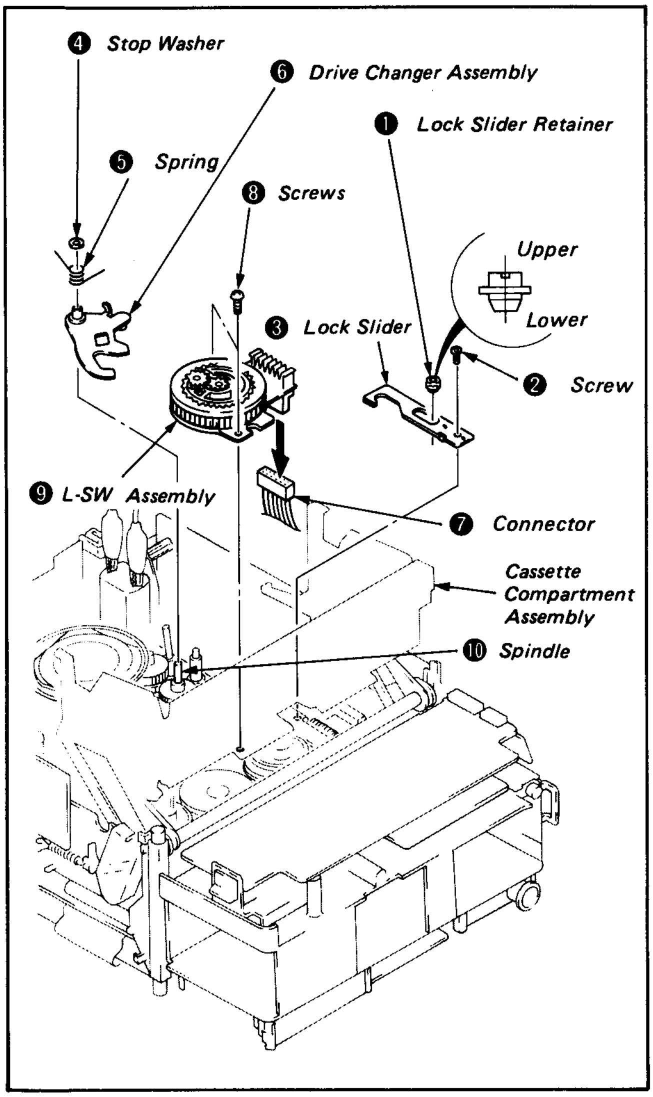

④ Stop Washer
⑥ Drive Changer Assembly
① Lock Slider Retainer
⑤ Spring
⑧ Screws
Upper
Lower
③ Lock Slider
② Screw
⑨ L-SW Assembly
⑦ Connector
Cassette Compartment Assembly
⑩ Spindle

Fig. 8-34.

2. Remounting

1) Oil half a drop of oil on the spindle (planetary roller spindle) of the L-SW assembly ⑨ .
2) Remount the L-SW assembly ⑨ and tighten two screws ⑧ .
3) Reconnect the connector ⑦ .
4) Operate the mode selector and check that the L-SW assembly ⑨ rotates.
5) Oil half a drop of oil on the spindle ⑩ .
6) Grease the drive changer assembly ⑥. (See Fig. 8-35.)
7) Remount the drive changer assembly ⑥ . (See Fig. 8-34.)
8) Rehook the spring ⑤ and refit the stop washer ④ .
9) Operate the mode selector and check that the L-SW assembly ⑨ rotates.
10) Operate the mode selector, and set in the position shown in Fig. 8-36.
11) Remount lock slider ③ and secure with screw ②.
12) Remount by taking note of lock slider retainer ① upper and lower sections. (See Fig. 8-34.)
13) Remount L slider assembly in accordance with 8-3-11.

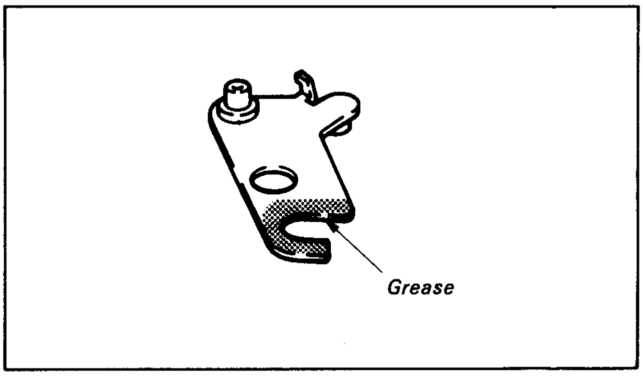


Fig. 8-35.

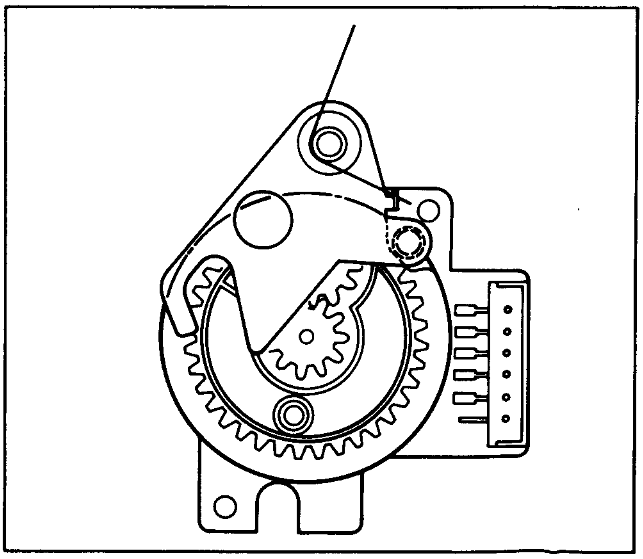


Fig. 8-38.

8-3-13. Plunger Solenoid

1. Removal

1) Open the battery holder assembly in accordance with Section 2, 2-18.
2) Remove cassette compartment in accordance with Section 2, 2-11.
3) Remove T reel table assembly in accordance with 8-3-2.
4) Remove the spring ❶.
5) Remove two stop washers ❷.
6) Remove the screw ❸ and lock slider ❹.
7) Remove soldering from ❸ sections of the terminal of the plunger solenoid ❻.
8) Remove two screws ❺ and the plunger solenoid ❻. (See Fig. 8-37.)

2. Remounting

1) Reinsert the pin ❼ of the plunger solenoid in the P arm hole ❽ and tighten two screws ❺ . Be careful not to inflict scars on the T reel table by a screwdriver or touch it.)
2) Solder 3 sections of the terminal of the plunger solenoid ❻.
3) Remount the lock slider ❹ and tighten the screw ❸.
4) Refit the two stop washers ❷.
5) Refit the spring ❶. (See Fig. 8-37.)
6) Remount T reel table assembly in accordance with 8-3-2.
7) Remount the cassette compartment assembly in accordance with 8-1-1.
8) Remount the battery holder assembly in reverse procedure of Section 2, 2-18.

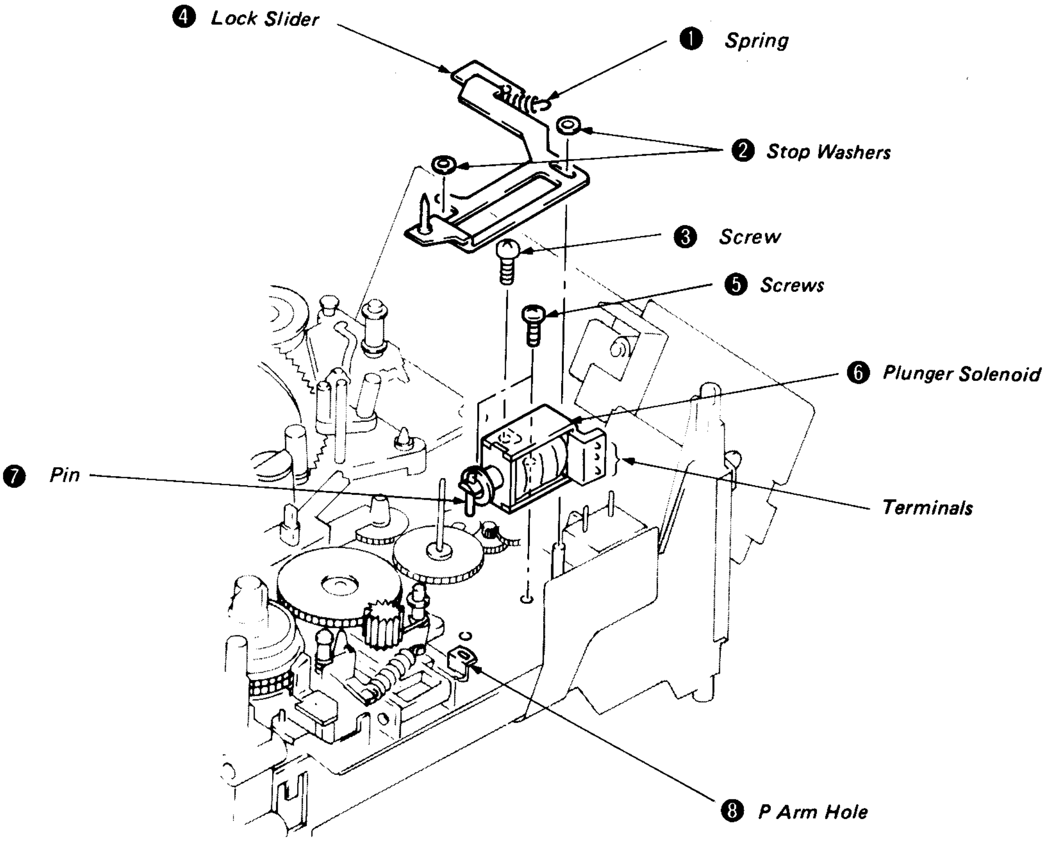


Fig. 8-37.

8-3-14. M-SW Assembly

1. Removal

1) Open the battery holder assembly in accordance with Section 2, 2-18.
2) Remove the T reel table assembly as instructed in 8-3-2.
3) Remove the stop washer ① and drive gear (B) assembly ②.
4) Remove the complete LD-1 board ③. (See Fig. 8-38.)
5) Remove the lock slider as instructed in 3), 4), and 5) of 1. Removal in 8-3-13.
6) Remove the spring ④ and B release arm assembly ⑤.
7) Check that the EJECT mode is set up.
8) Remove the stop wahser ⑥ and mode output gear ⑦.
9) Remove soldering from three sections of terminal of RECOG SW assembly ⑧.
10) Remove the screw ⑨ and RECOG SW assembly (S902) ⑧.
11) Disconnect the connector ⑩.
12) Remove three screws ⑪, control motor cover ⑫.
13) Push TS release arm ⑬ in the direction of arrow Ⓐ while raising up the M-SW assembly ⑭ and next push the T main brake assembly ⑮ in the direction of arrow Ⓑ and remove the M-SW assembly ⑭.
14) Remove solder Ⓒ and the control motor (M903) ⑯. (See Fig. 8-39.)

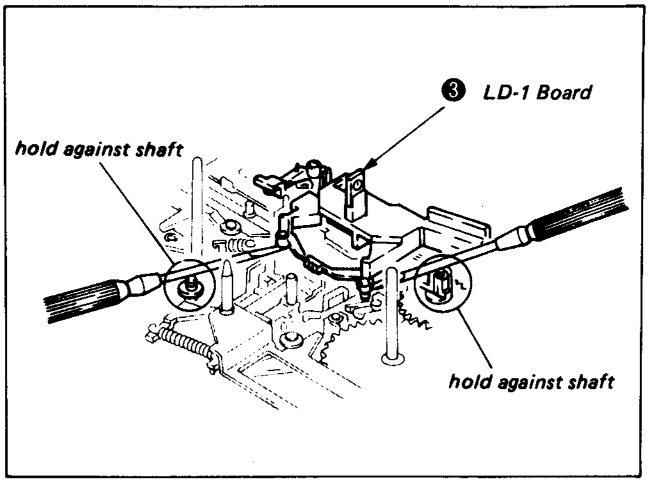

③ LD-1 Board
hold against shaft
hold against shaft

Fig. 8-38.

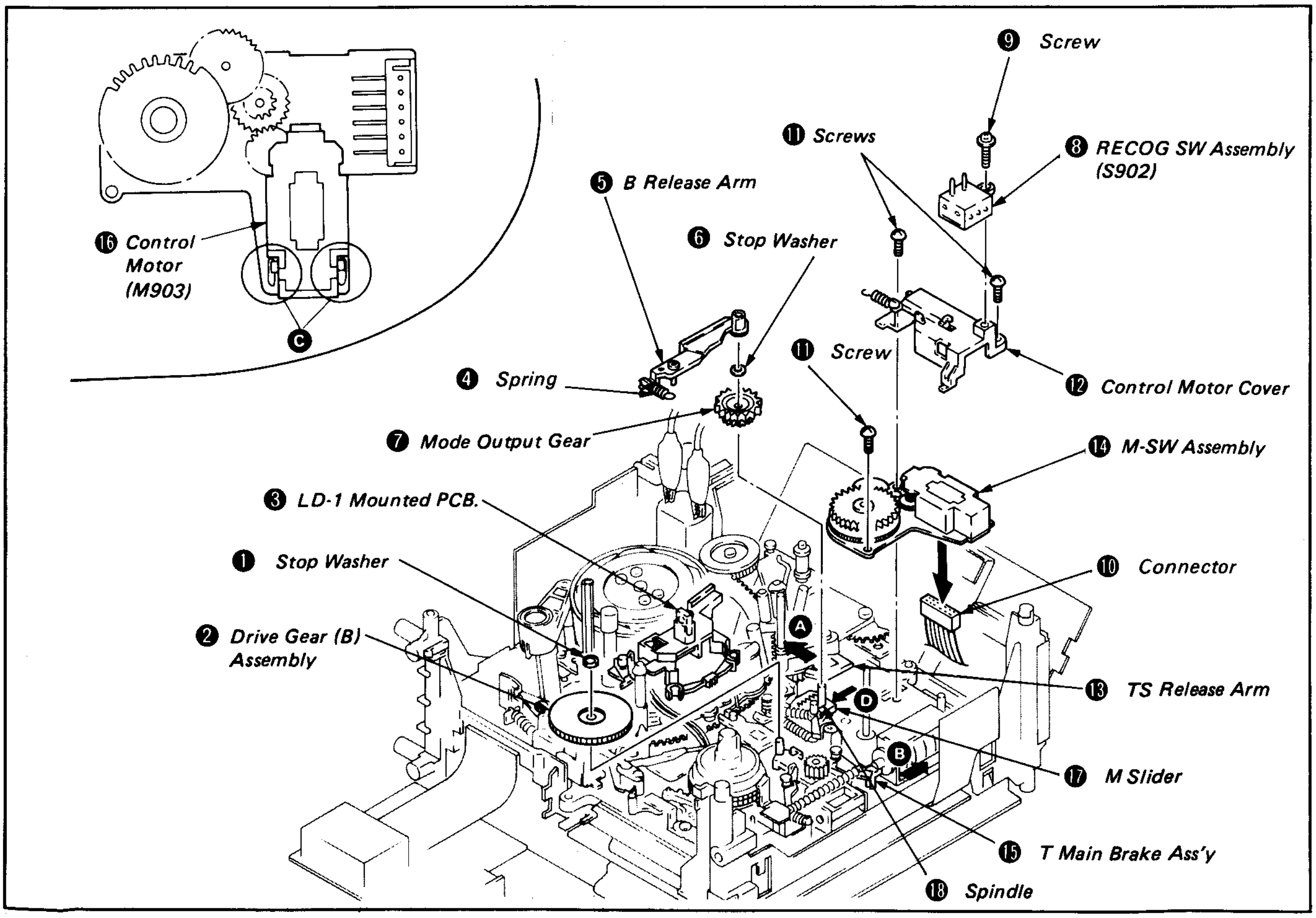

⑨ Screw
⑪ Screws
⑧ RECOG SW Assembly (S902)
⑤ B Release Arm
⑥ Stop Washer
⑯ Control Motor (M903)
Ⓒ
⑪ Screw
④ Spring
⑫ Control Motor Cover
⑦ Mode Output Gear
⑭ M-SW Assembly
③ LD-1 Mounted PCB.
① Stop Washer
⑩ Connector
② Drive Gear (B) Assembly
Ⓐ
Ⓓ
Ⓑ
⑬ TS Release Arm
⑰ M Slider
⑮ T Main Brake Ass'y
⑱ Spindle

Fig. 8-39.

2. Remounting

1) Resolder the control motor (M903) ⑯ .
2) Remount M-SW assembly ⑭ in the reverse procedure of 13) Removal.
3) Remount Control motor cover ⑫ and secure with three screws ⑪ .
4) Connect connector ⑩ .
5) Solder three sections of terminal of RECOG SW assembly ⑧.
6) Remount RECOG SW assembly ⑧ and tighten the screw ⑨.
7) Check that the EJECT mode is set up.
8) Check that the M slider ⑰ is moved toward the arrow Ⓓ fully.
9) Oil half a drop of oil on the spindle ⑱ . (See Fig. 8-39.)
10) Remount the mode output gear ⑦ so that the alignment holes are linear. (See Fig. 8-40.)
11) Refit the stop washer ⑥.
12) Set to the LOADING/UNLOADING mode.
13) Remount the B release arm assembly ⑤ and rehook the spring ④.
14) Remount the lock slider as instructed in 3), 4) and 5) of 2. Remounting in 8-3-13.
15) Remount the complete LD-1 board ③ .
16) Remount the drive gear (B) assembly ② and refit the stop washer ①. (See Fig. 8-39.)
17) Remount the T reel table assembly as instructed in 8-3-2.
18) Remount the battery holder assembly in the reverse procedure of Section 2, 2-18.

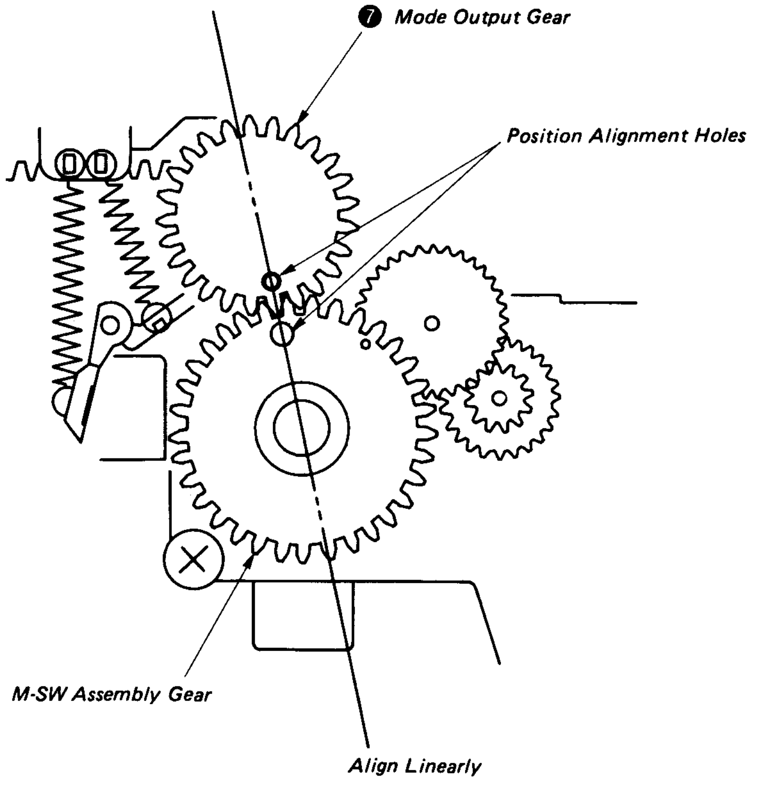


Fig. 8-40.

8-3-15. M Slider

1. Removal

1) Open the SS-64 Board as instructed in Section 2, 2-13. and remove the timing belt ①.
2) Remove S reel table assembly in accordance with 8-3-1.
3) Remove T reel table assembly in accordance with 8-3-2.
4) Remove the pinch press arm assembly as instructed in 8-3-3.
5) Remove the tension regulator arm assembly as instructed in 8-3-4.
6) Remove the tension regulator band assembly as insturcted in 8-3-5.
7) Remove the loading ring assembly as instructed in 8-3-7.
8) Perform Steps 2) to 6) of 8-3-14.
9) Remove the tension regulator load arm assembly as instructed in 8) of 1. Removal in 8-3-11.
10) Remove the spring ②.
11) Remove two stop washers ③ , S main brake assembly ④ and T main brake assembly ⑤ .
12) Set up the LOADING TOP and LOADING/UNLOADING modes.
13) Remove two screws ⑥ and the driving arm complete assembly ⑦ .
14) Perform Step 8) of 1. Removal in 8-3-14.
15) Remove two springs ⑧.
16) Remove the REW brake assembly ⑨ .
17) Remove the RVS arm ⑩ .
18) Remove the stop washer ⑪ and B release slider ⑫ .
19) Remove the stop washer ⑬ , spring ⑭ , and RL arm ⑮ .
20) Move the M slider ⑯ toward the right (leave approximately 5mm on the left).
21) Remove the E ring ⑰ and pinch press lever assembly ⑱ .
22) Remove the spring ⑲ and hard brake (S) ⑳ .
23) Remove the stop washer ㉑ , push the mode arm ㉒ toward the arrow then remove the M slider ⑯ by lifting the lefthand side of the M slider ⑯ . (See Fig. 8-41.)

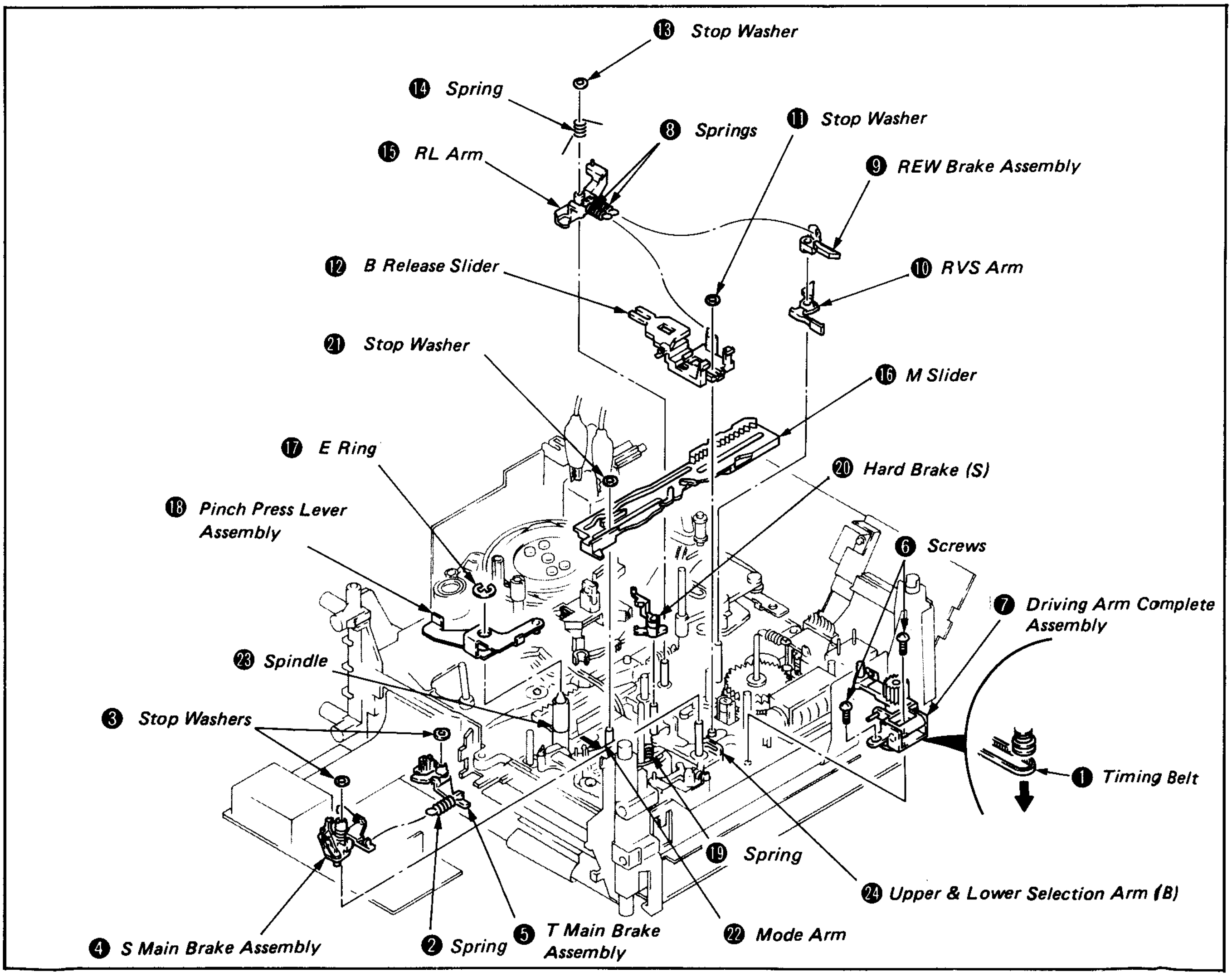

⑬ Stop Washer
⑭ Spring
⑧ Springs
⑪ Stop Washer
⑮ RL Arm
⑨ REW Brake Assembly
⑫ B Release Slider
⑩ RVS Arm
㉑ Stop Washer
⑯ M Slider
⑰ E Ring
⑳ Hard Brake (S)
⑱ Pinch Press Lever Assembly
⑥ Screws
⑦ Driving Arm Complete Assembly
㉓ Spindle
③ Stop Washers
① Timing Belt
⑲ Spring
㉔ Upper & Lower Selection Arm (B)
④ S Main Brake Assembly
② Spring
⑤ T Main Brake Assembly
㉒ Mode Arm

Fig. 8-41.

2. Remounting

1) Grease the slider. (See Fig. 8-42.)
2) Push the mode arm ㉒ in the arrow direction, remount the M slider ⓰ referring to Fig. 8-43 and paying attention to the vertical position relationship with other portions of the slider, and refit the stop washer ㉑ . (See Fig. 8-41.)
3) Remount the hard brake (S) ⓴ and rehook the spring ⓳ .
4) Grease as shown in Fig. 8-44.
5) Oil half a drop of oil on the parts below the spindle ㉓ groove, mount the pinch press lever assembly ⓲ , and refit the E ring ⓱ .
6) Remount the RL arm ⓯ , rehook the spring ⓮ , and refit the stop washer ⓭ .
7) Remount B release slider ⓬ and place stop washer ⓫ .
8) Slide B release slider ⓬ on the side of drum and remount reverse arm ❿ .
9) Remount the REW brake assembly ❾ .
10) Rehook two springs ❽ .

Note: Rehook two springs as noted below so as not to misplace them.
The spring for the B release slider
outside diam: 2mm, wire diam: 0.18mm
The spring for the REW ass'y
outside diam: 1.6mm, wire diam: 0.12mm

11) Move the M slider ⓰ fully to the left.
12) Set up the EJECT mode.
13) Perform Steps 9), 10) and 11) of 2. Remounting in 8-3-14.
14) Set up the LOADING/UNLOADING mode.
15) Insert the horizontal spindle of the driving arm complete assembly ❼ in the groove of the upper & lower selection arm (B) ㉔ , insert the lug of the RVS arm ⓬ in the dented part of the driving arm complete assembly ❼ , and tighten two screws ❻ .
16) Remount the T main brake assembly ❺ and S main brake assembly ❹ , refit two each stop washers ❸ , and refit the spring ❷. (See Fig. 8-41.)
17) Remount the tension regulator load arm assembly as instructed in 2) of 2. Remounting in 8-3-11.
18) Perform Steps 13) to 17) of 2. Remounting in 8-3-14.
19) Remount the loading ring assembly as instructed in 8-3-7.
12) Remount the tension regulator band assembly as instructed in 8-3-5.
21) Remount the tension regulator arm assembly as instructed in 8-3-4.
22) Remount the pinch press arm assembly as instructed in 8-3-3.
23) Remount T reel table assembly in accordance with 8-3-2.
24) Remount S reel table assembly in accordance with 8-3-1.
25) Remount timing belt ❶, and remount SS-64 board by referring to Section 2, 2-13.

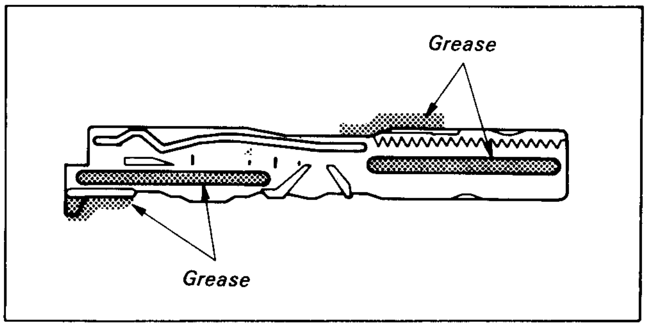


Fig. 8-42.

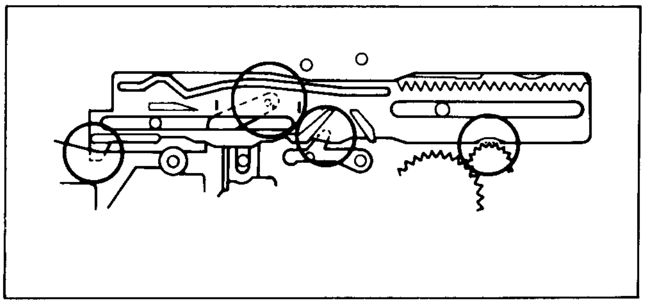


Fig. 8-43.

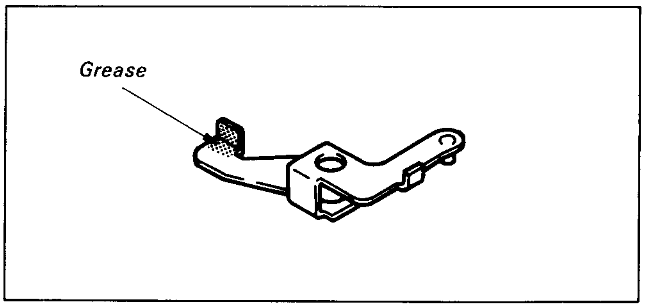


Fig. 8-44.

8-3-16. Capstan Motor

1. Removal

1) Remove the tape stopper as instructed in 1) of 1. Removal in 8-3-10.
2) Remove the loading ring assembly as instructed in 8-3-7.
3) Open the SS-64 Board as instructed in Section 2, 2-13. and turn the set upside down.
4) Remove wiring from wire clamp ❷.
5) Remove screw ❶ and remove wire clamp ❷.
6) Remove the timing belt ❸.
7) Remove the screw ❹ and the change gear base assembly ❺ using a screwdriver. (See Fig. 8-45 and 46.)
8) Remove flexible connector ❻.
9) Remove two screws ❼ and remove capstan motor assembly ❽ in the direction of arrow. (See Fig. 8-46.)

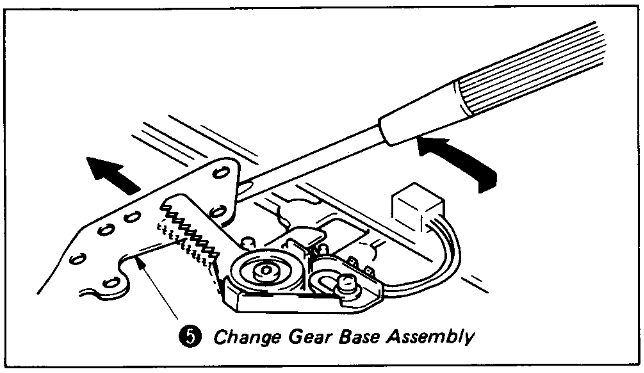

❺ Change Gear Base Assembly

Fig. 8-45.

2. Remounting

1) Remount the capstan motor (M902) ❽ and tighten two screws ❼.
2) Connect flexible connector ❻. (See Fig. 8-46.)
3) Remount the change gear base assembly ❺ and tighten the screw ❹.
4) Re-place the timing belt ❸.
5) Remount the wire clamp ❷ and tighten the screw ❶. (See Fig. 8-46.)
6) Remount wiring into wire clamp ❷.
7) Remount SS-64 board with set in upward position in accordance with Section 2, 2-13.
8) Remount the loading ring assembly as instructed in 8-3-7.
9) Remount the tape stopper as instructed in 6) of 2. Remounting in 8-3-10.

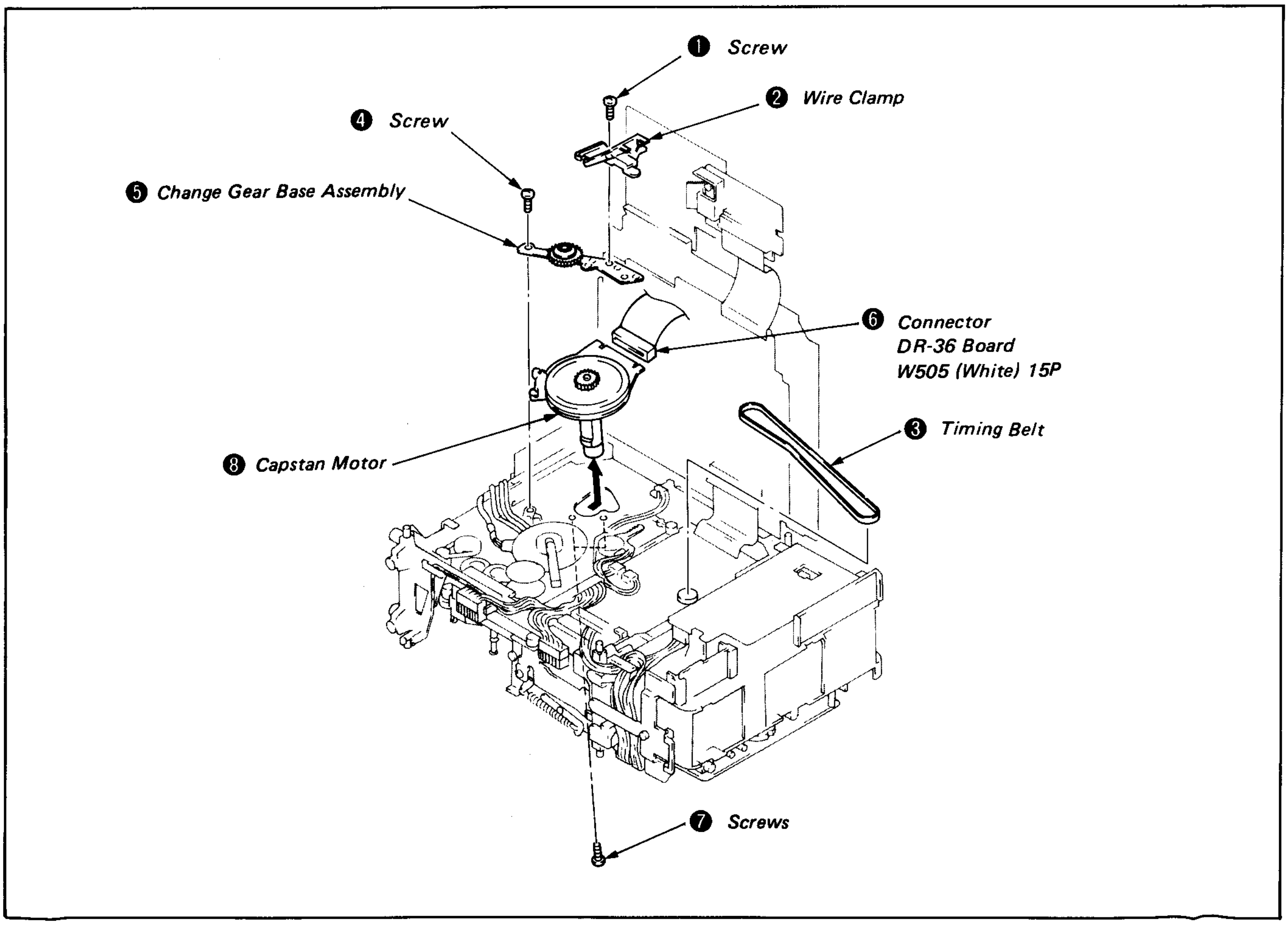

❶ Screw
❷ Wire Clamp
❹ Screw
❺ Change Gear Base Assembly
❻ Connector
DR-36 Board
W505 (White) 15P
❸ Timing Belt
❽ Capstan Motor
❼ Screws

Fig. 8-46.

8-3-17. Rotary Upper Drum Replacement

1. Removal

Note: If it is possible to be video-recorded, perform video recording before hand and then remove it.

1) Remove two hexagon socket screws (2 x 2.7) ❶ and dismount the dynamic damper ❷. (See Fig. 8-47.)
2) Suction solder at all of the soldered eight positions Ⓐ. Check that the printed wiring board and pins jutting out from below freely moove using tweezers, or other tool. (See Fig. 8-47.)
3) Remove the two hexagon socket screws (2x5) ❸. (See Fig. 8-47.)
4) Remount the dismounting Jig Ⓑ by the accessory screws ❹ utilizing the screw holes in which the dynamic damper was mounted.
   Drive the hexagon socket screw ❺ into the jig and pulled up the rotary upper drum ❻. (See Fig. 8-48.)

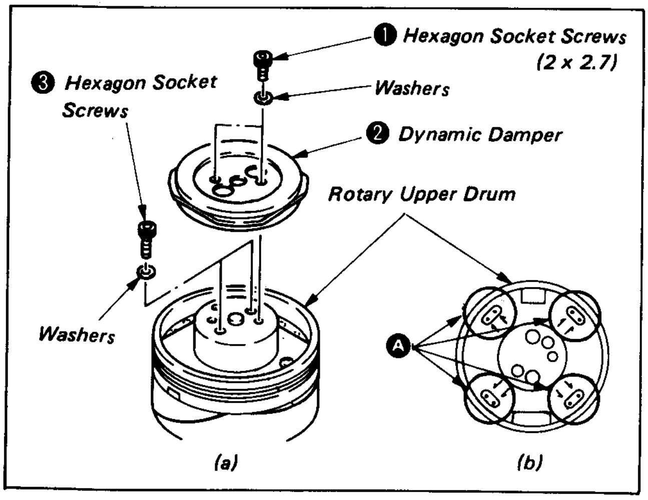

❶ Hexagon Socket Screws (2 x 2.7)
❸ Hexagon Socket Screws
Washers
❷ Dynamic Damper
Rotary Upper Drum
Washers
Ⓐ
(a)
(b)

Fig. 8-47.

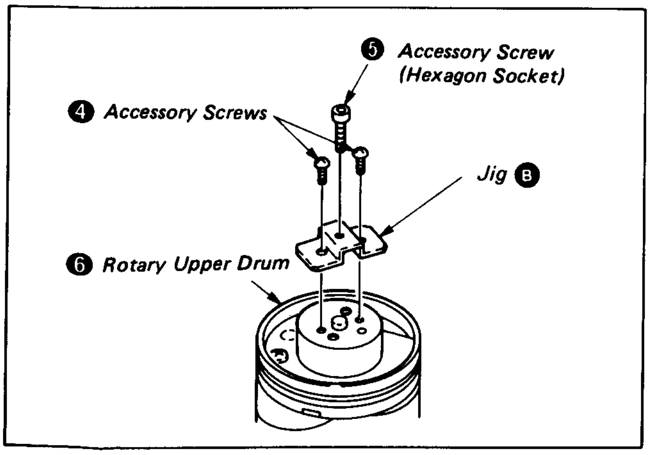

❺ Accessory Screw (Hexagon Socket)
❹ Accessory Screws
Jig Ⓑ
❻ Rotary Upper Drum

Fig. 8-48.

2. Remounting

1) Carefully clean the flange surfaces and planes of the rotary upper drum and visually check that no blemishes or flaws are left.
2) Insert Jig Ⓒ in the positioning hole Ⓓ so that the holes of the rotary upper drum ❻ and flange coincide. Lightly insert the rotary upper drum in the drum shaft while aligning their positions. (See Fig. 8-49.) (Check that pins are projecting above the holes on the printed circuit board of the rotary upper drum. When the pins are caught, correct using tweezers, etc.)
3) Remove Jig Ⓒ, lightly push the rotary upper drum by hands. If the rotary upper drum does not go in to the bottom, alternately tighten the two hexagon socket screws (2 x 5) ❸ by hand and temporarily fix them. (See Fig. 8-47 and 8-50.)
4) Reinsert the Jig Ⓒ in the positioning hole and check that the jig can be inserted smoothly. (When the jig cannot be inserted, loosen the two hexagon socket screws (2 x 5) ❸ and slide it inserting a clock screw-driver in the hole.)
5) Tighten the two hexagon socket screws (2 x 5) ❸.

Note: Do not tighten too strongly.

6) Solder the eight positions Ⓐ. (See Fig. 8-47.)

Note: Be careful not to flow solder below the printed wiring board.

7) Tighten the two hexagon socket screws (2 x 2.7) ❶ reversing the screw removal procedure and remount the dynamic damper ❷. (See Fig. 8-47.)

Note: Do not tighten too strongly.
When remounting, do not mix the hexagon socket screws (2 x 2.7) ❶ and hexagon socket screws (2 x 5) ❸.

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

Note: Replay the recorded tape after adjusting the tape path and before exchanging the rotary upper drum and check that the tape replays properly.

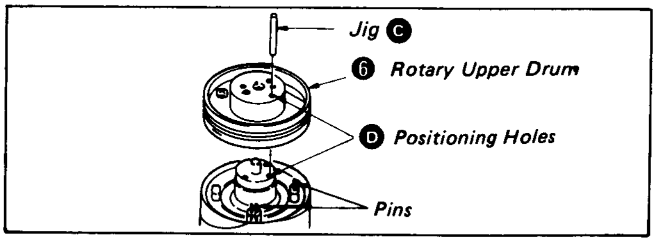

Jig Ⓒ
❻ Rotary Upper Drum
Ⓓ Positioning Holes
Pins

Fig. 8-49.

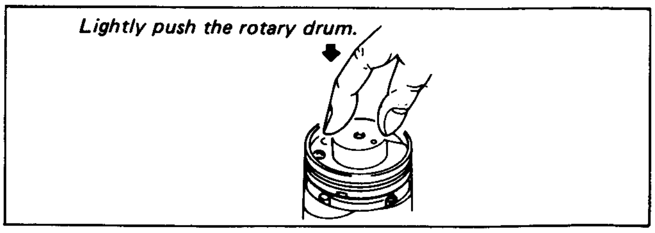

Lightly push the rotary drum.

Fig. 8-50.

8-3-18. Drum Assembly Replacement

1. Removal

1) Open the SS-64 Board as instructed in Section 2, 2-13.
2) Remove the screw ❶.
3) Remove the screw ❷ and shaft ground terminal ❸. (See Fig. 8-51.)
4) Disconnect five connectors ❹.
5) Remove two screws ❺.
6) Remove the drum assembly ❻. (See Fig. 8-52.)

2. Remounting

1) Remount the drum assembly ❻ and tighten two screws ❺.
2) Connect five connectors ❹. (See Fig. 8-52.)
3) Remount the shaft ground terminal ❸ and tighten the screw ❷.
4) Remount the screw ❶. (See Fig. 8-51.)
5) Remount SS-64 board in the reverse procedure of Section 2, 2-13.

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

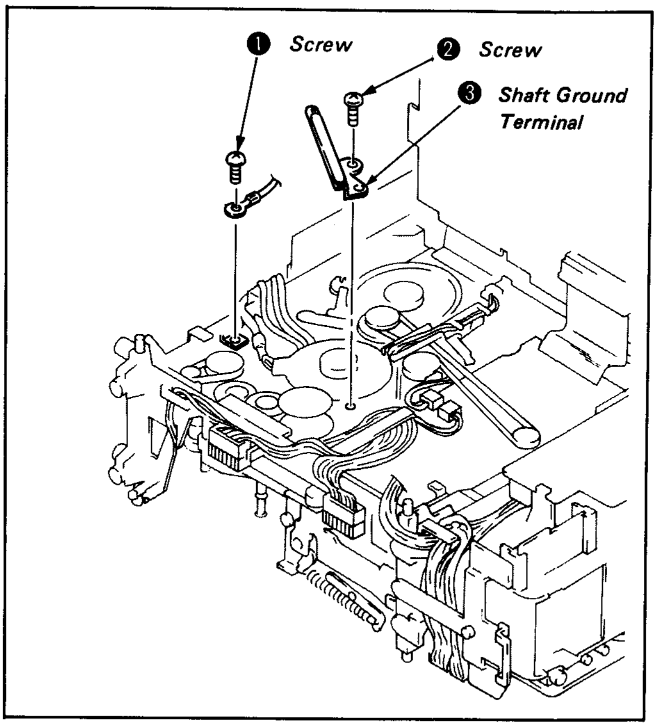

❶ Screw
❷ Screw
❸ Shaft Ground Terminal

Fig. 8-51.

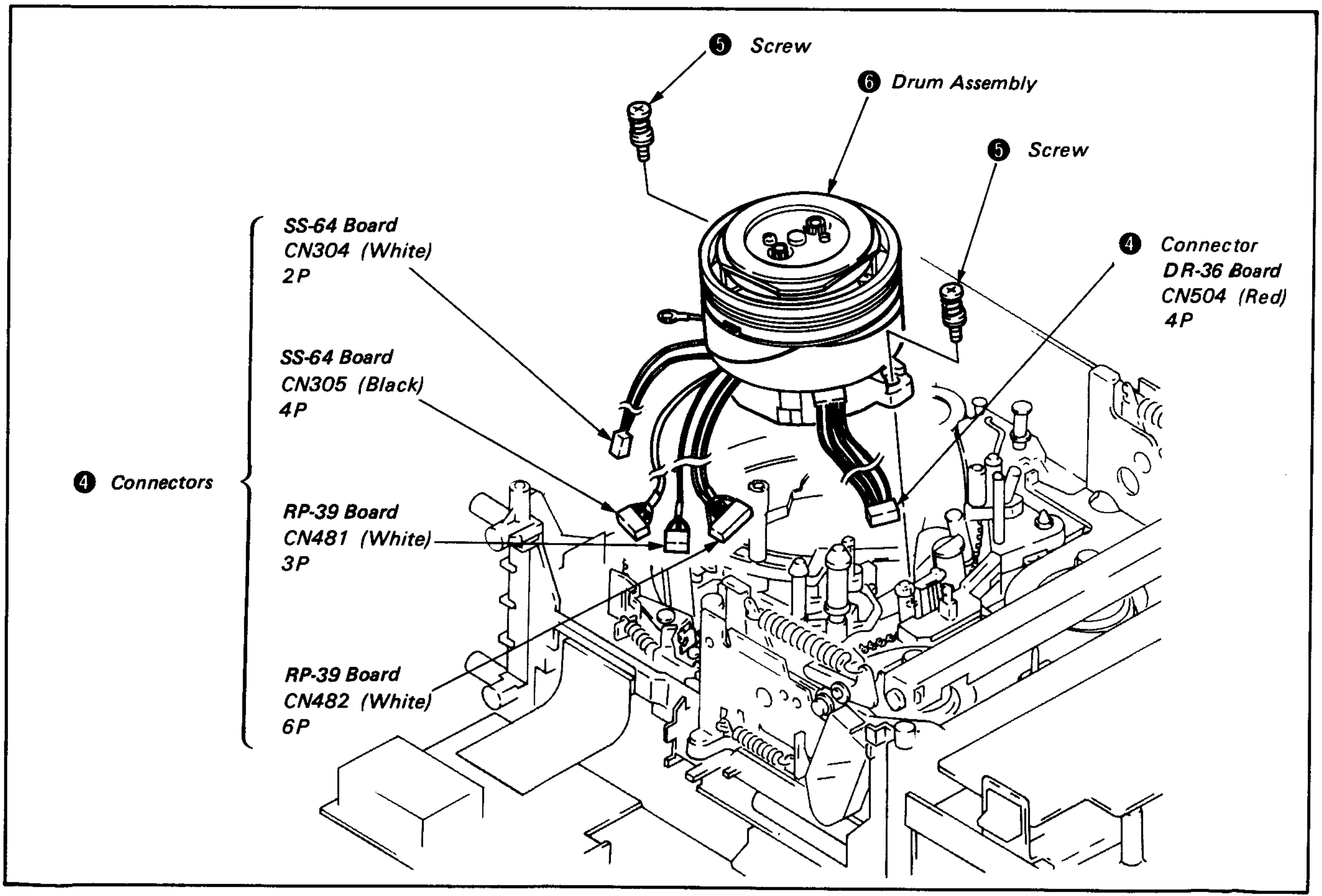

❺ Screw
❻ Drum Assembly
❺ Screw
❹ Connector DR-36 Board CN504 (Red) 4P
SS-64 Board CN304 (White) 2P
SS-64 Board CN305 (Black) 4P
❹ Connectors
RP-39 Board CN481 (White) 3P
RP-39 Board CN482 (White) 6P

Fig. 8-52.

8-3-19. Adjustment after Replacing No.3 and No.4 Guides

Run the tape on the upper flanges for both No. 3 and 4 guides after replacing them. (See Fig. 8-88.)

8-3-20. No.5 Guide Assembly

1. Removal

1) Remove the tape stopper as instructed in 1) of 1. removal in 8-3-10.
2) Remove three screws ❶ and No. 5 guide assembly.
3) Remove the guide nut ❷ , the spring ❸ and the shaft ❹. (See Fig. 8-53.)

2. Remounting

1) Reinsert the spring ❸ in the shaft ❹ , reengage the dent and bump in the lower parts, and tighten the guide nut ❷.
2) Remount the No. 5 guide assembly and tighten three screws ❶. (See Fig. 8-53.)
3) Remount the tape stopper as instructed in 6) of 2. Remounting in 8-3-10.

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

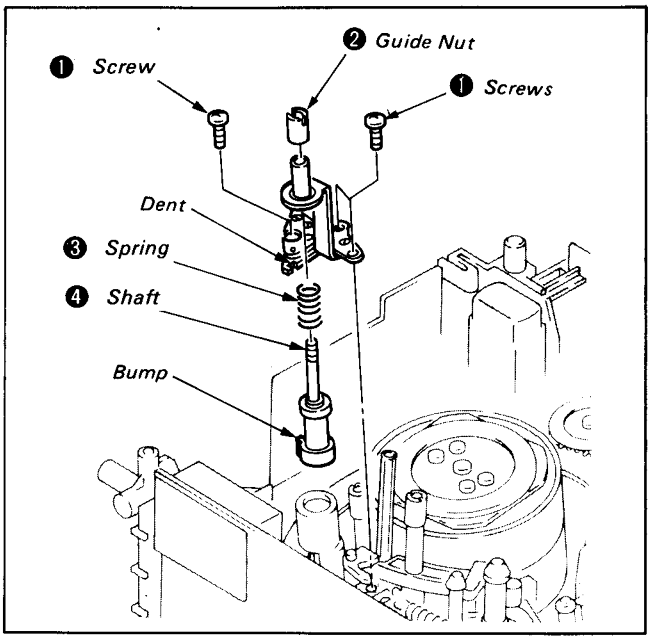

❶ Screw
❷ Guide Nut
❶ Screws
Dent
❸ Spring
❹ Shaft
Bump

Fig. 8-53.

8-3-21. FWD Back Tension Adjustment

Note: Prior to the adjustment, perform tape FWD running for over 2 minutes.

1) Set up the LOADING END and FWD modes.
2) Loosen the screw ❷ of the band adjustment plate ❶ , adjust the slit ❸ and pin ❹ of the tension regulator arm assembly to be in the position shown by the arrow Ⓐ in the Fig. 8-54, then tighten the screw ❷.
3) Place the reel (Ref. No. J-7) ❻ to measure tensions on the S reel table ❺ and run a tape along No. 1, 2 and 3 guides and the drum.
4) Pull the dial tension gauge (Ref. No. J-6) ❼ in the arrow Ⓑ direction and re-place the spring ❾ on the tension regulator spring hook assembly ❽ as mentioned below so that the value becomes 13.0 ± 1g. (See Fig. 8-54.)

Larger than standard . . . . Arrow Ⓒ direction
Smaller than standard. . . . . Arrow Ⓓ direction

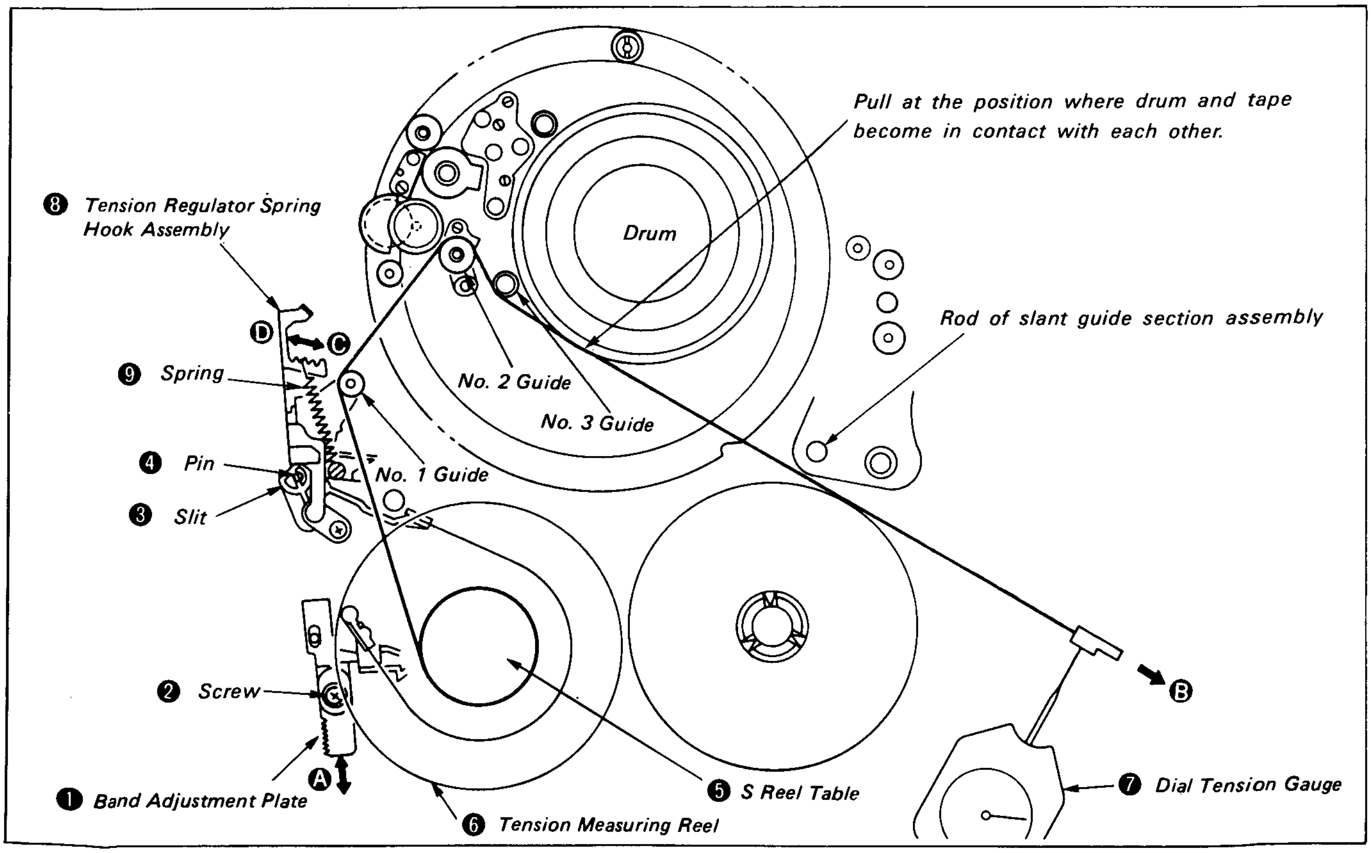

Pull at the position where drum and tape become in contact with each other.
❽ Tension Regulator Spring Hook Assembly
Drum
Ⓓ
Ⓒ
❾ Spring
No. 2 Guide
No. 3 Guide
Rod of slant guide section assembly
❹ Pin
❸ Slit
No. 1 Guide
❷ Screw
Ⓑ
Ⓐ
❶ Band Adjustment Plate
❺ S Reel Table
❻ Tension Measuring Reel
❼ Dial Tension Gauge

Fig. 8-54.

8-3-22. Checking and Adjustment of Timing Belt Tension

1) Remove the timing belt. (Refer to 1) of 1. Removal in 8-3-15.)
2) Cover the LED photodetector section (TS-55 Board) for tape end detection with a vinyl tape, and load.
3) Short-circuit Pin ③ of CN302 and GND on SS-64 board. (See Fig. 8-55.)
4) Disengage the pinch press arm side (round hook side) of the tension spring hooked on the pinch press arm assembly. (See Fig. 8-56.)
5) Hold the safety pin of the RECOG switch (rec proof side) and tape it. press the REC button to set up the REC mode. (See Fig. 8-57.)
6) Measure voltage (Vo) at both ends of R523 on DR-36 board with analog tester (Non-load state). (See Fig. 8-58.)
7) Remount the timing belt. (Refer to 4) of 2. Remounting in 8-3-16.
8) Remove the driving gear (B) assembly as instructed in 3) of 1. Removal in 8-3-14.
9) Set into REC mode in accordance with 5) and measure voltage (Vx) at both ends of R523 as in 6). (During tension adjustment)
10) Check that the voltage (Vx) during tension adjustment is 22 to 44mV higher than the voltage (Vo) in a no-load state. Adjust as follows if the voltage is not as required.

Adjustment Method:

i) Loosen the screw ❶ , slide the idler assembly as shown by the arrow 🅐 , and fix it by tightening the screw ❶. (See Fig. 8-59.)
ii) Recheck after performing Step 9).
iii) Repeat i) and ii) until the standard is satisfied.

11) Eliminate short-circuit between Pin ③ of CN302 and GND on SS-64 board.
12) Remount the driving gear (B) assembly and the tension spring of the pinch press arm assembly.

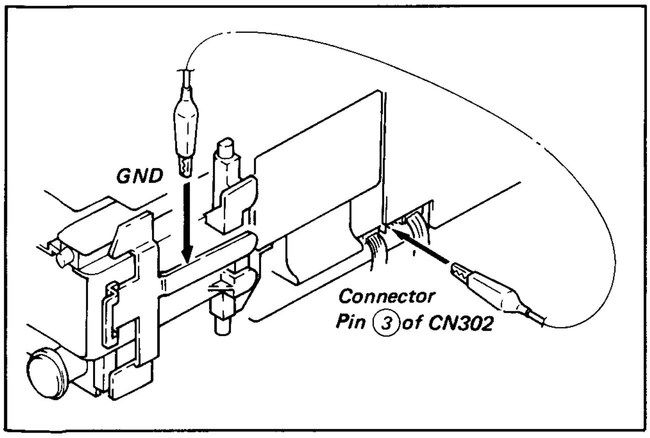


Fig. 8-55.

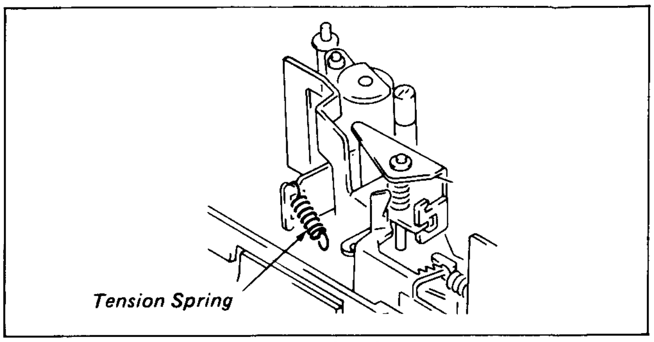


Fig. 8-56.

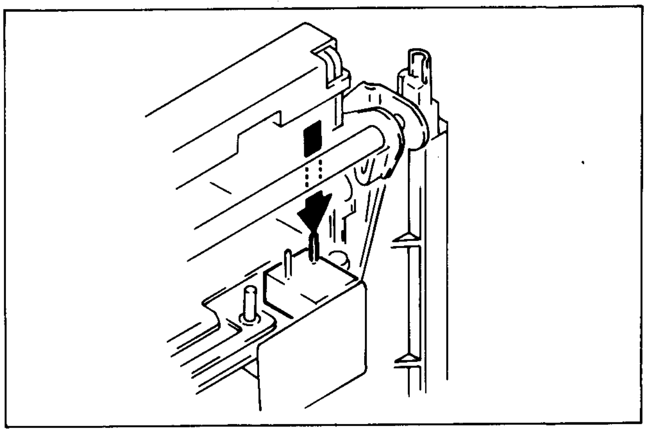


Fig. 8-57.

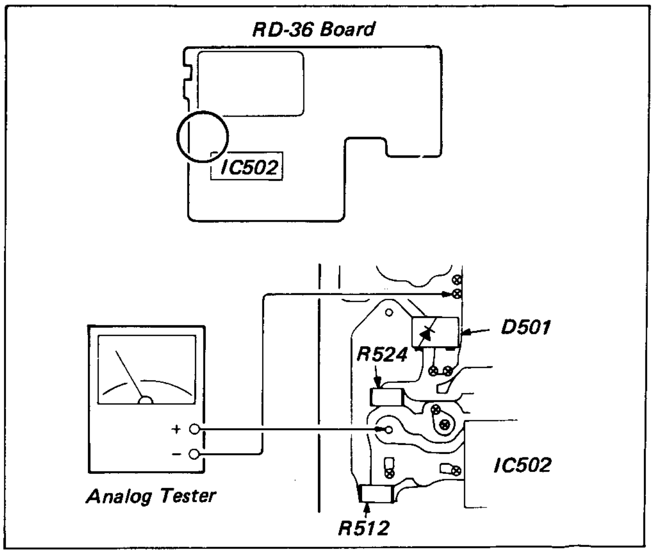


Fig. 8-58.

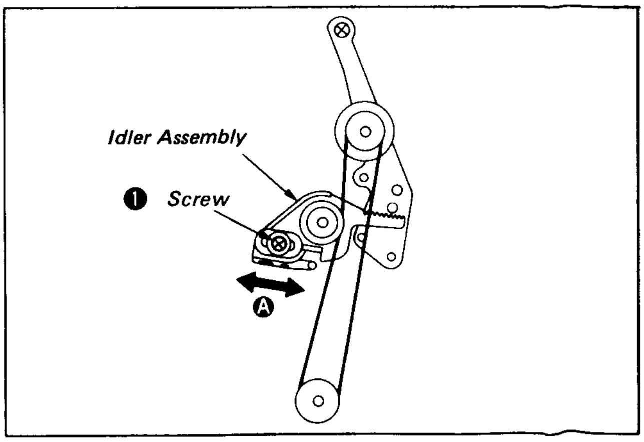


Fig. 8-59.

8-3-23. Checking S and T Main Brake Torques

1) Remove the battery holder assembly in accordance with Section 2, 2-18.
2) Remove the cassette compartment assembly as instructed in Section 2, 2-11.

1. S main brake torque

1) Set up the FF/REW mode.
2) place the tension measuring reel (Ref. No. J-8) on the S reel table.
3) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-60 and 61.)

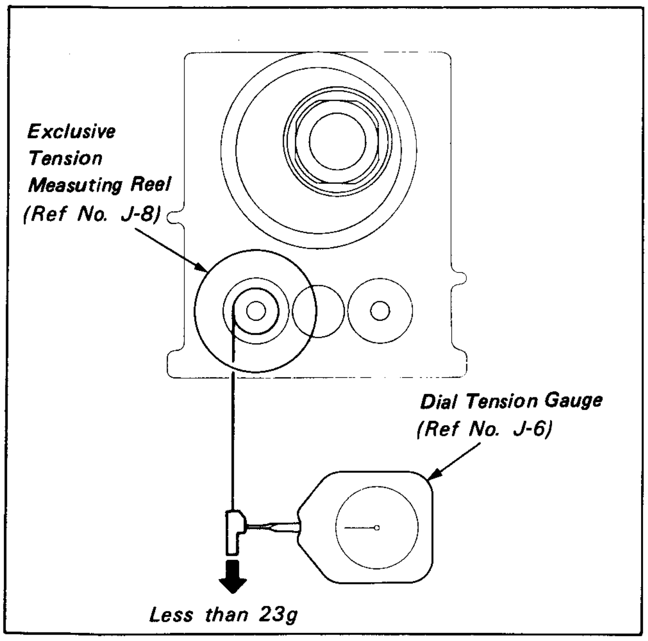

Exclusive Tension Measuting Reel (Ref No. J-8)
Dial Tension Gauge (Ref No. J-6)
Less than 23g

Fig. 8-60.

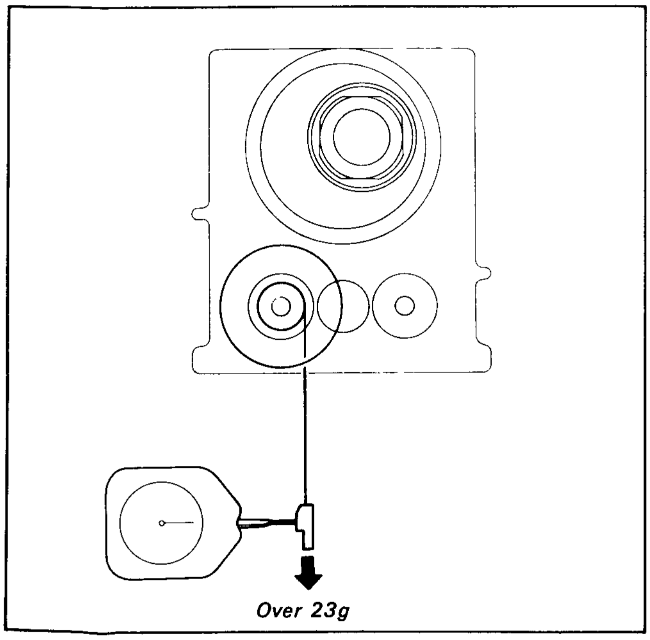


Fig. 8-61.

2. T main brake torque

1) Set up the FF/REW mode.
2) Place the tension measuring reel (Ref. No. J-8) on the T reel table.
3) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-62 and 63.)

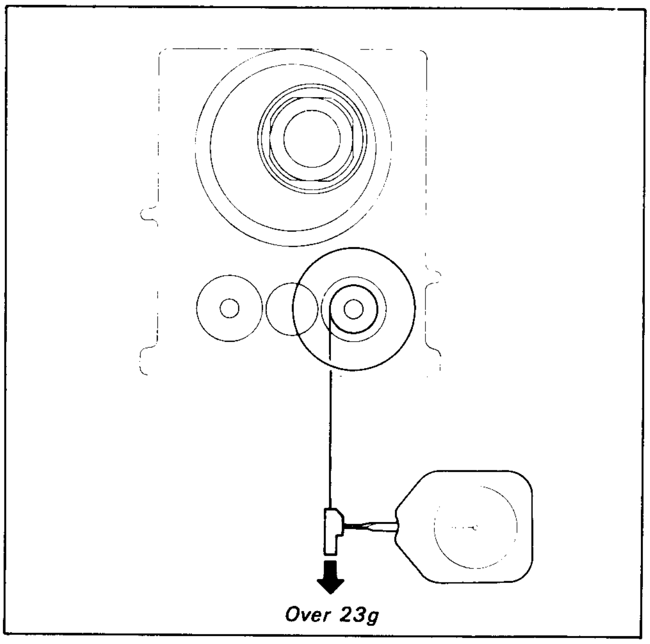


Fig. 8-62.

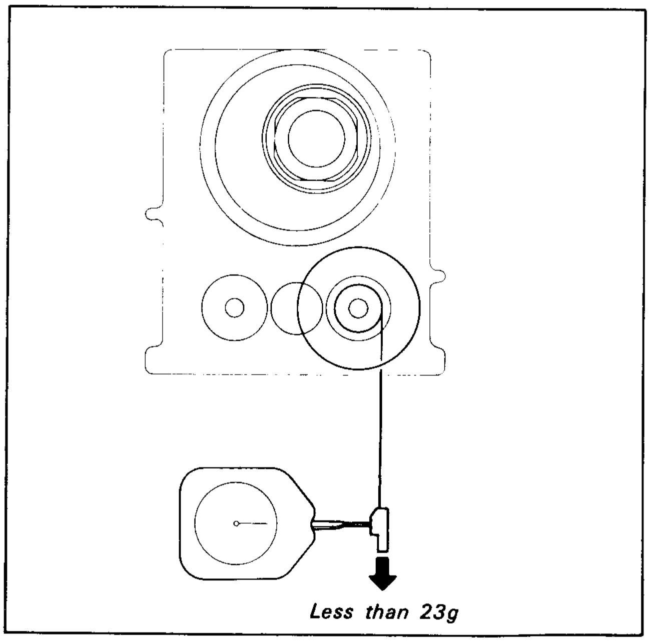

Less than 23g

Fig. 8-63.

8-3-24. Checking S and T Soft Brake Torques

1) Remove the battery holder assembly in accordance with Section 2, 2-18.
2) Remove the cassette compartment assembly as instructed in Section 2, 2-11.

1. S soft brake torque

1) Set up the FF/REW mode.
2) Place the tension measuring reel (Ref. No. J-8) on the S reel table.
3) Release the S main brake with a finger.
4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-64.)

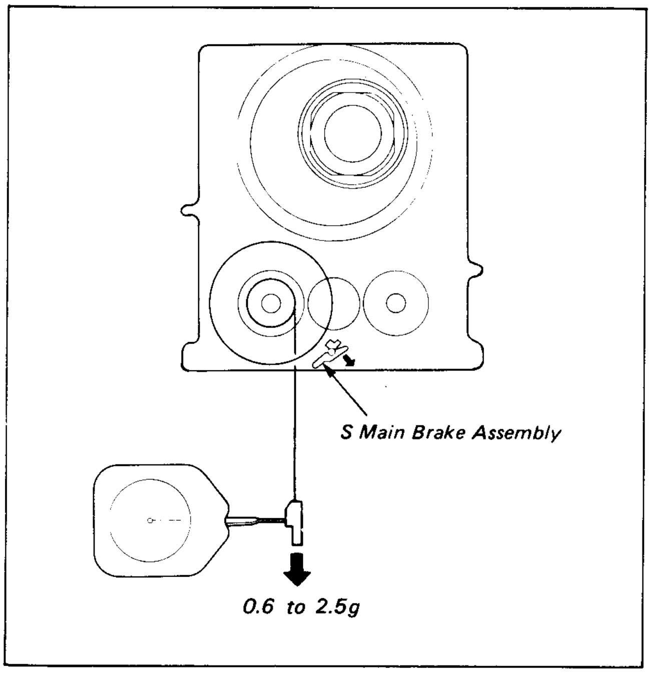


Fig. 8-64.

2. T soft brake torque

1) Set up the REV mode.
2) Place the tension measuring reel (Ref. No. J-8) on the T reel table.
3) Release the T main brake with a finger.
4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfied the required value. (See Fig. 8-65.)

Note: In the REV mode, both the T soft brake and REW brake are engaged.

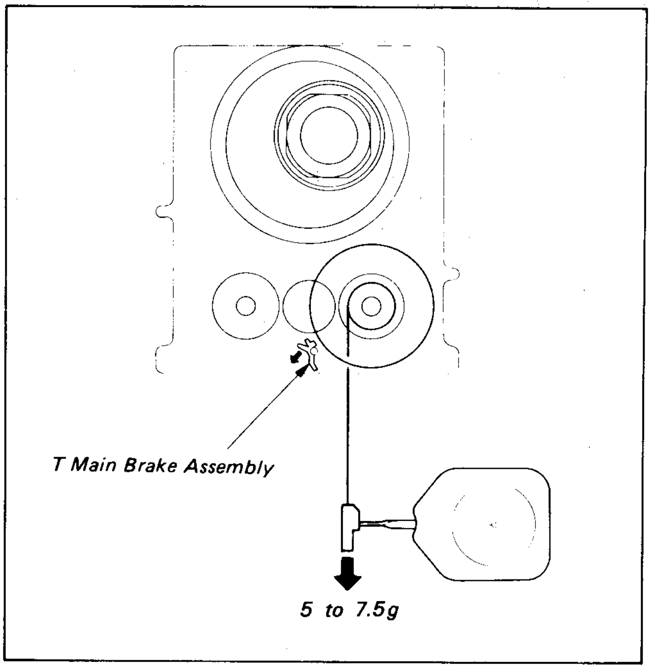


Fig. 8-65.

8-3-25. Checking REV and REW Brake Torques

1) Remove the battery holder assembly in accordance with Section 2, 2-18.
2) Remove the cassette compartment assembly as instructed in Section 2, 2-11.

1. REV brake torque

1) Set up the REV mode.
2) Place the tension measuring reel (Ref. No. J-8) on the S reel table.
3) Release the S main brake assembly with a finger.
4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-66.)

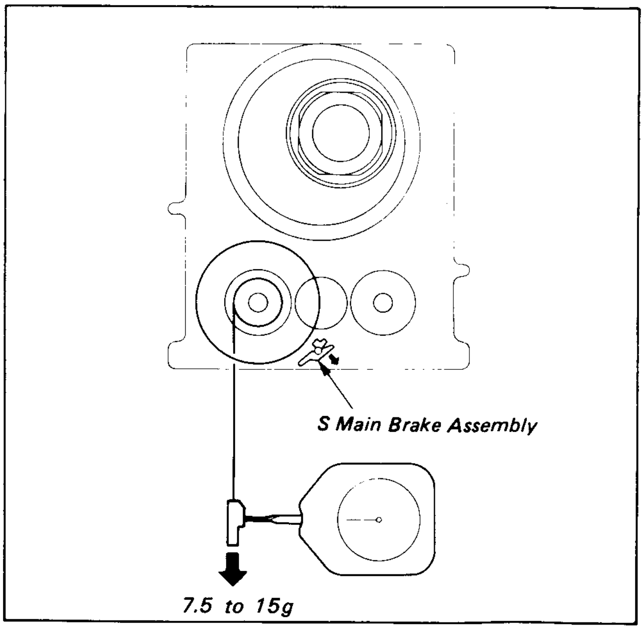


Fig. 8-66.

2. REV brake torque

1) Set up the FF/REW mode.
2) Place the tension measuring reel (Ref. No. J-8) on the T reel table.
3) Release T main brake with finger.
4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-67.)

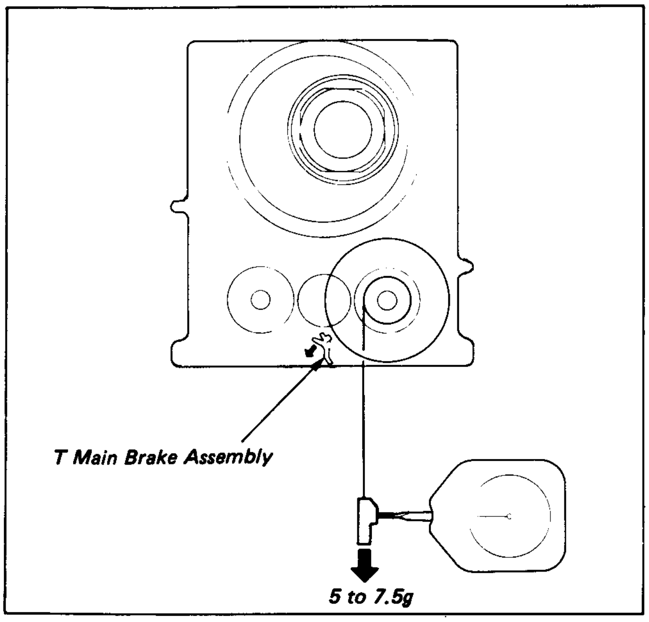


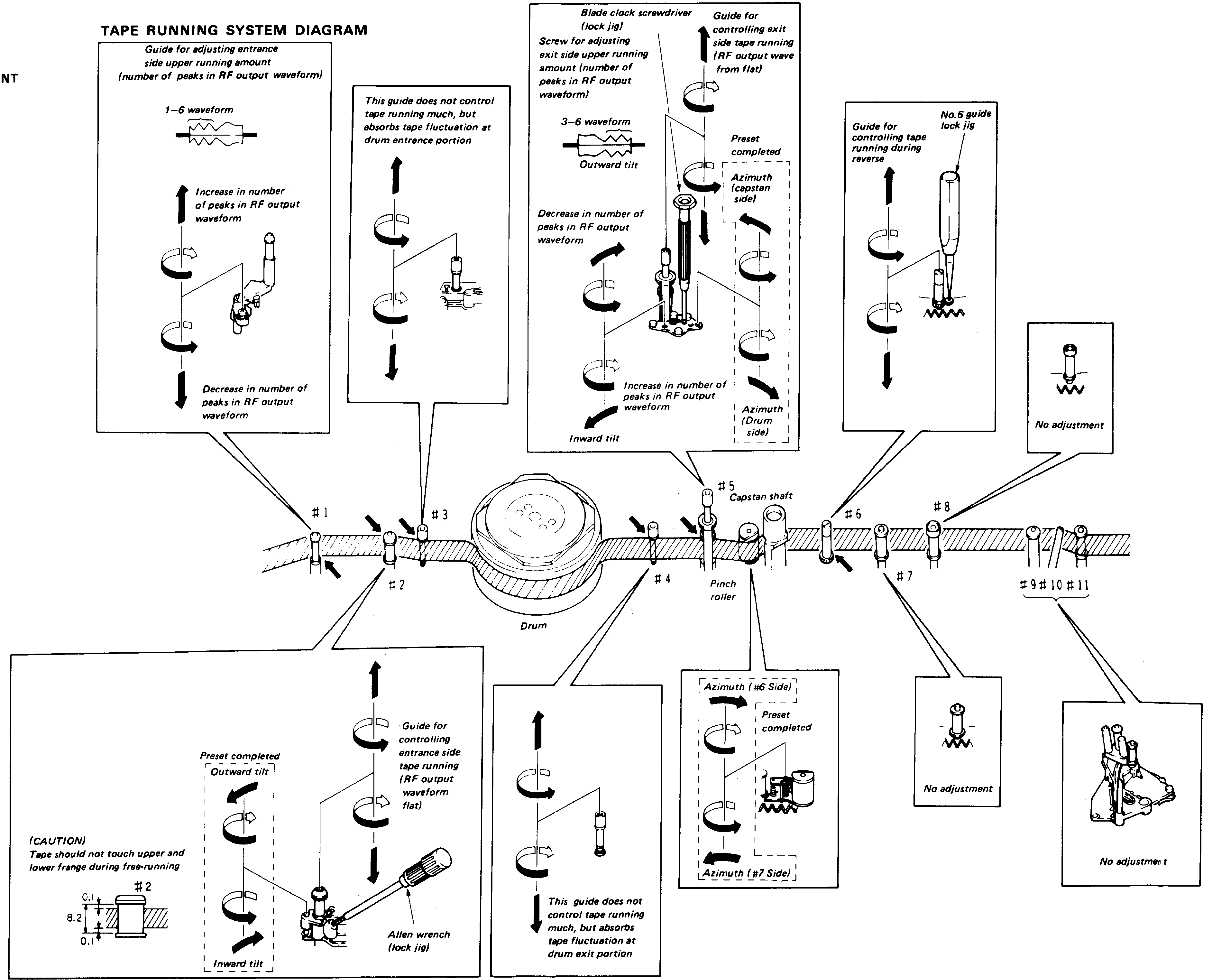
Fig. 8-67.

8-3-26. Checking by FWD and RVS Take-up Torque Cassette

1) Remove cassette cover in accordance with Section 2, 2-2.
2) Set the FWD and RVS take-up torque cassette (Ref. No. J-12).
3) Set up the PLAY BACK mode and check that the torque value on the T reel table side is 9.5 to 15.5g·cm.
4) Set up the PLAY BACK mode and check that the torque value on the S reel table side immediately after pressing the REW button is 17 to 23g·cm.
5) Replace the reel tables if the foregoing values are not satisfied.

8-4. TAPE PATH ADJUSTMENT

TAPE RUNNING SYSTEM DIAGRAM



Guide for adjusting entrance side upper running amount (number of peaks in RF output waveform)

Increase in number of peaks in RF output waveform

Decrease in number of peaks in RF output waveform

This guide does not control tape running much, but absorbs tape fluctuation at drum entrance portion

Screw for adjusting exit side upper running amount (number of peaks in RF output waveform)

Guide for controlling exit side tape running (RF output wave from flat)

Decrease in number of peaks in RF output waveform

Increase in number of peaks in RF output waveform

Guide for controlling tape running during reverse

(CAUTION)
Tape should not touch upper and lower frange during free-running

Guide for controlling entrance side tape running (RF output waveform flat)

This guide does not control tape running much, but absorbs tape fluctuation at drum exit portion

1–6 waveform
Blade clock screwdriver (lock jig)
3–6 waveform
Outward tilt
Inward tilt
Preset completed
Azimuth (capstan side)
Azimuth (Drum side)
No.6 guide lock jig
No adjustment
#1
#2
#3
#4
#5
Capstan shaft
#6
#7
#8
#9 #10 #11
Drum
Pinch roller
Preset completed
Outward tilt
Inward tilt
#2
0.1
8.2
0.1
Allen wrench (lock jig)
Azimuth (#6 Side)
Preset completed
Azimuth (#7 Side)
No adjustment
No adjustment

[REGARDING TRACK SHIFT & MONITOR JIG]

The video 8 system employs a high precision tracking ATF (auto track finding) and instantaneously controls the tape running speed with the 4 kinds pilot signals. In this way, the tracking adjustment knob becomes unnecessary, and accurate tracing has become possible.
However, on the other hand, there has been difficulty in adjusting the tape path system with the ATF method. It was due to the fact that complete adjustment had been impossible to be performed because even when the tracing of the head had been a slightly off course, the ATF would perform correction automatically.
Because of this, adjustment is carried out to the tape path system by using the track shift & monitor jig (Ref. No J-6080-843-A). As the track shift and monitor jig forcibly releases the ATF and sets the tracking amount (track shift) manually, the adjustment of the tape path system can easily be carried out.

Perform this adjustment after the Section 7. camera adjustments and Section 9. video adjustments have been completed.

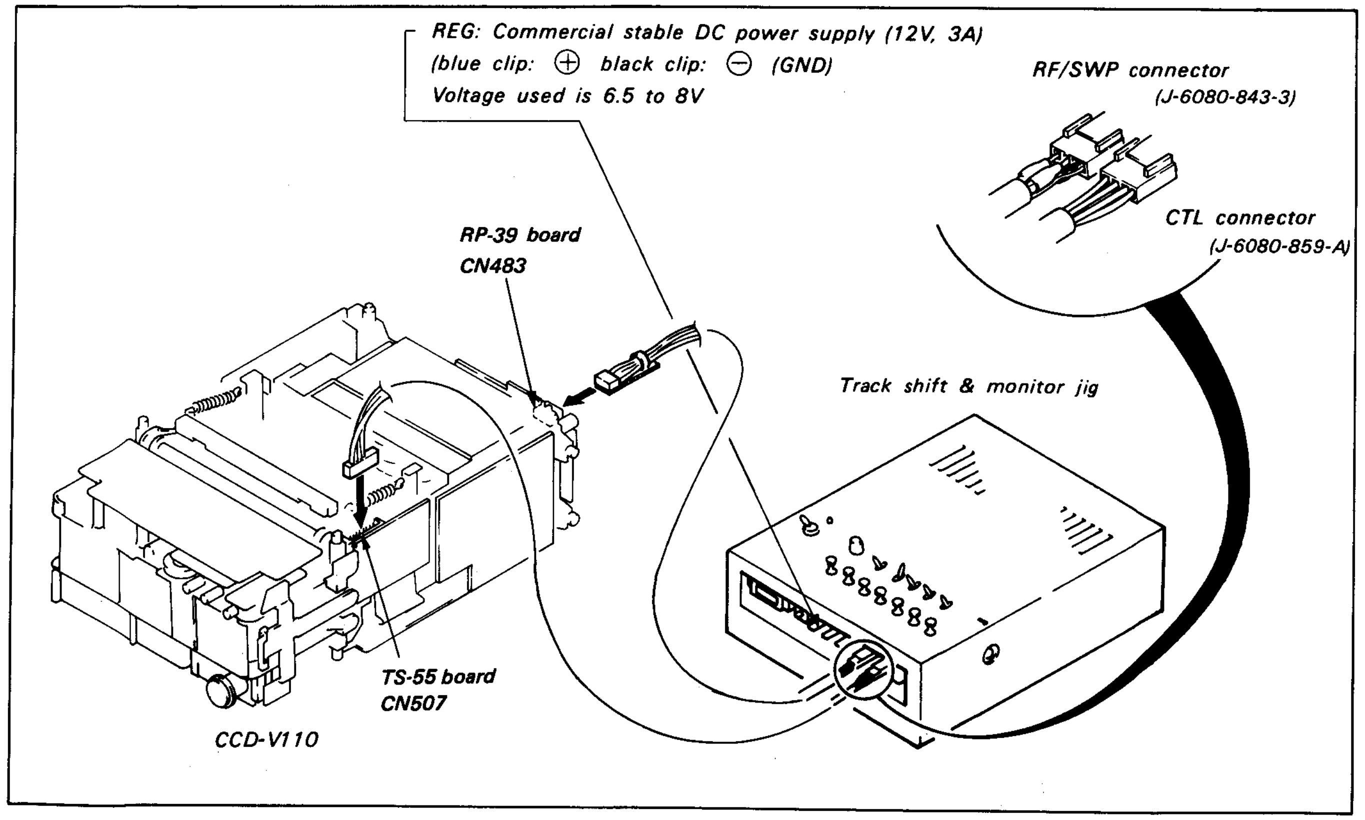

REG: Commercial stable DC power supply (12V, 3A)
(blue clip: ⊕ black clip: ⊖ (GND)
Voltage used is 6.5 to 8V
RF/SWP connector
(J-6080-843-3)
CTL connector
(J-6080-859-A)
RP-39 board
CN483
Track shift & monitor jig
TS-55 board
CN507
CCD-V110

Fig. 8-68.

[Power supply of track shift and monitor jig]
The track shift and monitor jig has 3 kinds of connectors as its external power supply terminals and it enables to utilize the following 3 kinds of power supplies.

Connector name	Connection of power supply
SYSTEM CONN	Connect the improved AC adapter AC-V8 for CCD-V110. (Regarding the improving method, see the instruction manual of the track shift and monitor jig.)
AC ADP	Connect an AC adapter AC-M110 for Beta movie.
REG	Connect a DC stabilized power supply of over 12V 3A on the market and use it with 6.5 to 8V. Be sure to connect the positive ⊕ and negative ⊖ without fail.

- Do not use more than 2 kinds of power suplies simultaneously.
- Use the connector which is attached to the track shift and monitor jig when connecting.
- Special caution should be taken because use of any power supply and voltage other than those mentioned above may cause damages.
- In the event the improved AC-V8 is used, the power supply for the circuit will be disconnected after a lapse of approximately 10 seconds when the power supply of the AC-V8 has been turned off.
- Since the power supply for the CCD-V110 main unit is not carried out, the power supply for it should be carried out at the same time.

8-4-1. Connection with Track Shift and Monitor Jig

i) Connect the RF/SWP connector to RP-39 board CN483.
ii) Connect the CTL connector to TS-55 board CN507.

[Switch Positions]
SEL switch:
When performing track shift: ON
When not performing track shift: OFF

PATTERN switch:	EV	
VTR/CMR switch:	either	
2.4K/Hi switch:		
ATF ADJ switch:	OFF	

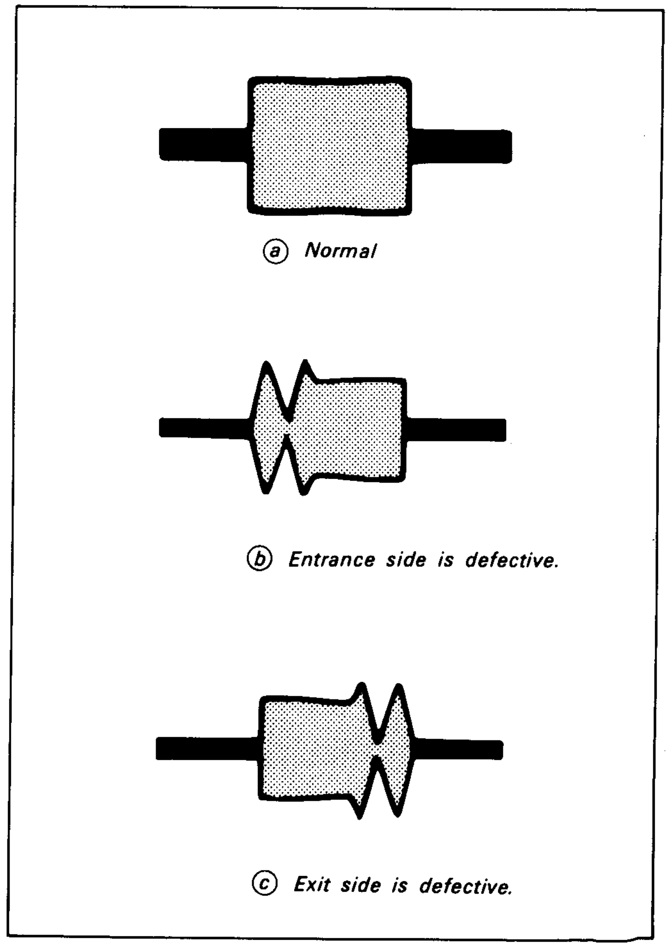
[Signal Output]
The following signals are output on each pin.

CH2 pin:	CH2 RF signal
CH1 pin:	CH1 RF signal
RF SWP pin:	RF SWP signal

Note: When an alignment tape is used, the RF signal is or output on CH2.

8-4-2. Preparation for Adjustment

1) Perform cleaning of the tape running surface (the individual tape guides drums, capstan shafts and pinch rollers.)
2) Connection of oscilloscope
1ch: CH2 pin: CH2 RF signal
2ch: RF SWP pin: RF SWP signal
(Fig. 8-68.)
3) Set the SEL switch of the track shift & monitor jig to OFF, then play back the alignment tape (WR5-1N) for tracking, and confirm that the RF waveform of both the entrance and exit sides become flat (Fig. ⓐ in 8-69). If the RF waveform of both sides is not flat, the ajdustment should be carried out in accordance with the following.
   - * In case the RF waveform on the entrance side is not flat (Fig. ⓑ in 8-69) . . . Perform the adjustment in Item 8-4-2., Entrance side adjustment.
   - * In case RF waveform on the exit side is not flat (Fig. ⓒ in 8-69) . . . Perform the adjustment in Item 8-4-3., Exit Side Adjustment.



ⓐ Normal

ⓑ Entrance side is defective.

ⓒ Exit side is defective.

Fig. 8-69.

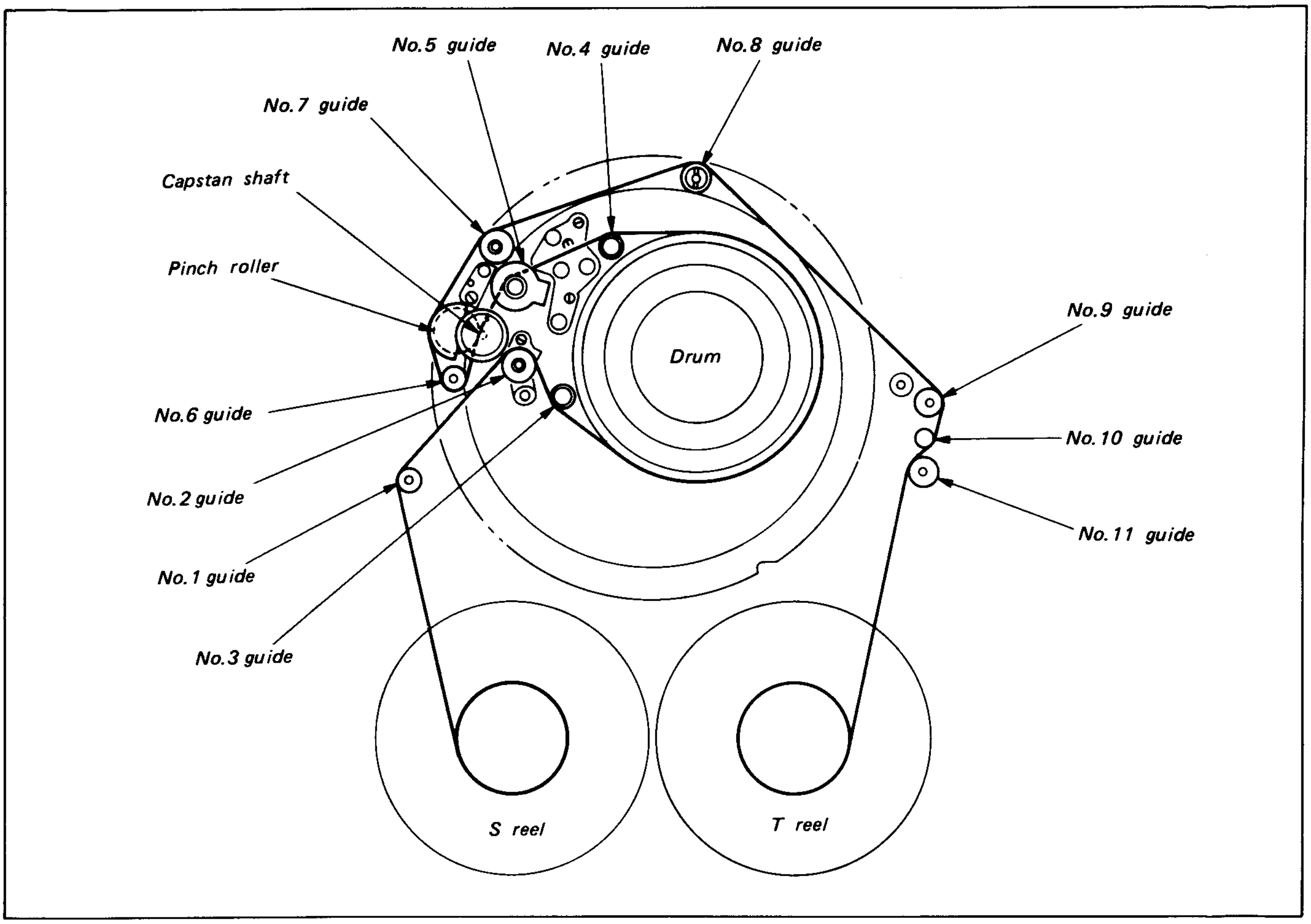

No.5 guide
No.4 guide
No.8 guide
No.7 guide
Capstan shaft
Pinch roller
No.9 guide
Drum
No.6 guide
No.10 guide
No.2 guide
No.11 guide
No.1 guide
No.3 guide
S reel
T reel

Fig. 8-70. Tape guide arrangement diagram

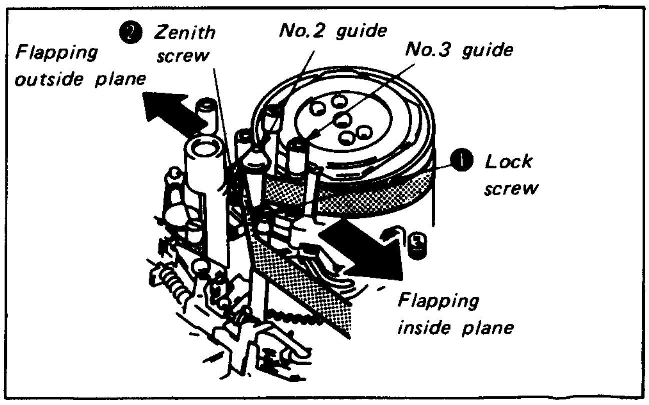

❷ Zenith screw
No.2 guide
Flapping outside plane
No.3 guide
❶ Lock screw
Flapping inside plane

Fig. 8-71.

8-4-3. Entrance Side Adjustment

1) Play back the tracking alignment tape (WR5-1N) and loosen No.2 guide lock screw ❶, and rotate No.2 and No.3 guides counterclockwise to free tape running on the entrance side. (Fig. 8-71)

Note: Since the space between the top and bottom flanges of No.2 guide is narrow, confirm that the tape is contacting neither top nor bottom flanges at this point. If No.2 guide is loosened excessively, the tape contacts the bottom flange and the RF waveform on the entrance side ceases to be the original free waveform.

2) Confirm that the RF waveform on the entrance side has 1 to 6 peaks in this condition. If not, adjust as follows. (Fig. 8-72)

<less than 1 peak>

Adjust the No.2 guide zenith screw ❷ by turning it counterclockwise 90° at a time. (Fig. 8-71)

<more than 6 peaks>

Adjust the height adjustment screw of No.1 guide (tension regulator assembly) by turning it counterclockwise 90° at a time. (Fig. 8-73)

3) Slowly rotate the No.2 guide clockwise to make the entrance side waveform approximately flat. (Fig. 8-74)
Note: Do not rotate No.2 guide excessively.
4) Set the SEL switch of the track shift & monitor jig to ON, then turn the track shift knob until the RF waveform amplitude is 2/3. (Fig. 8-75)
5) Turn No.2 guide so that the entrance side waveform flattens slightly. (Fig. 8-76)
6) Flatten the waveform with No.3 guide. (Fig. 8-77)
7) Tighten No.2 lock screrw ❶. (Fig. 8-71)
Note: Be sure to perform checking in accordance with 8-4-5.

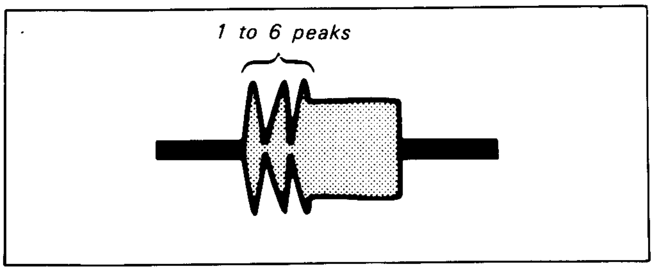


Fig. 8-72.

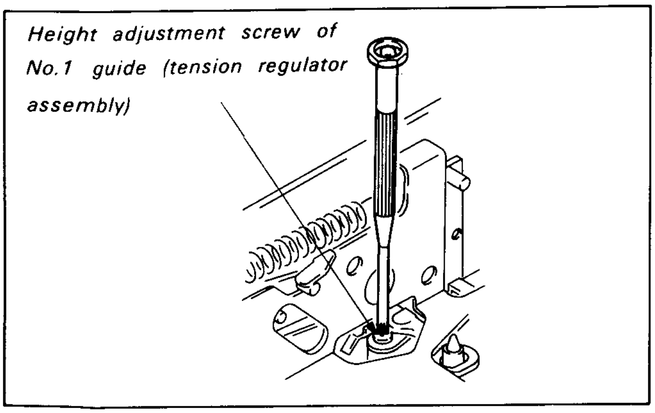

Height adjustment screw of No.1 guide (tension regulator assembly)

Fig. 8-73.

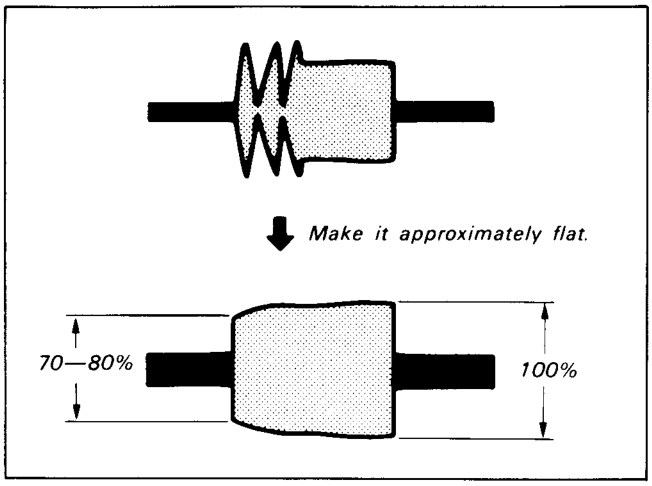

Make it approximately flat.
70—80%
100%

Fig. 8-74.

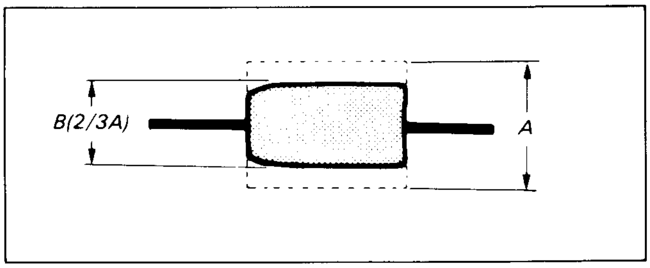


Fig. 8-75.

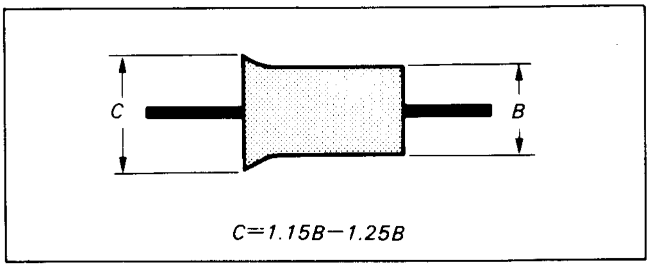

C
B
C=1.15B−1.25B

Fig. 8-76.

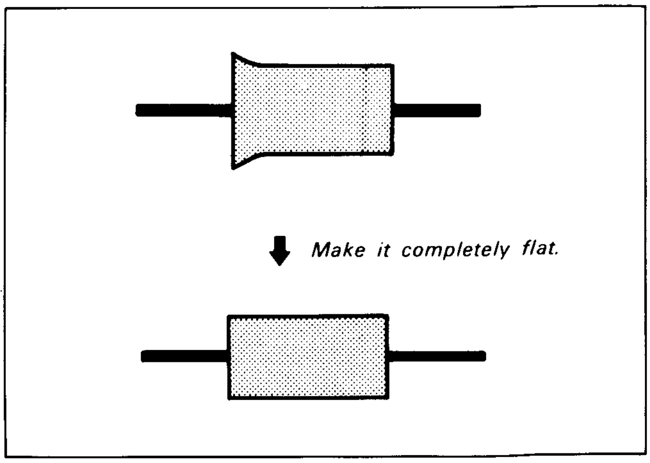

Make it completely flat.

Fig. 8-77.

8-4-4. Exit Side Adjustment

1) Play back the alignment tape (WR5-1N) for tracking and rotae No.5 guide clockwise in order to make the tape running on the exit side free. (Fig. 8-78)

   Note: • If screw lock is stuck to the No.5 guide nut, it may prevent the nut from rotating. Rotate the guide after immersing the nut thread into alcohol and to dissolve the screw lock agent.

   • Check that the tape is not contacting the top and buttom of flanges of No.5 guide during free tape running.

2) Check that the RF waveform on the exit side has 3 to 6 peaks. If not, readjust as follows: (Fig. 8-79)

   If off standard

   i) Rotate the lock screw ❶ counterclockwise to loosen.

   ii) Slowly rotate the zenith screw ❷ 45° at a time and wait until the RF waveform varies.

   iii) Rotate the lock screw ❶ clockwise to tighten. (Fig. 8-78)

   Note: • The waveform varies if the lock screw is tightened too strongly. Tighten moderately.

   • Never rotate the azimuth screw of No.5 guide.

3) Rotate No.5 guide counterclockwise to make the RF waveform on the exit side approximately flat. (Fig. 8-80)

   Note: The waveform reaction is slow against nut rotation. Rotate the nut after the waveform variations are stabillzed.

4) Set the SEL switch of the track shift & monitor jig to ON, then turn the track shift knob until the RF waveform amplitude is 2/3. (Fig. 8-81)

5) Turn No.5 guide so that the exit side waveform flats slightly. (Fig. 8-82)

6) Turn No. 4 guide so that waveform flat. (Fig. 8-83)

   Note: Be sure to perform checking in accordance with 8-4-5 after making the adjustment.

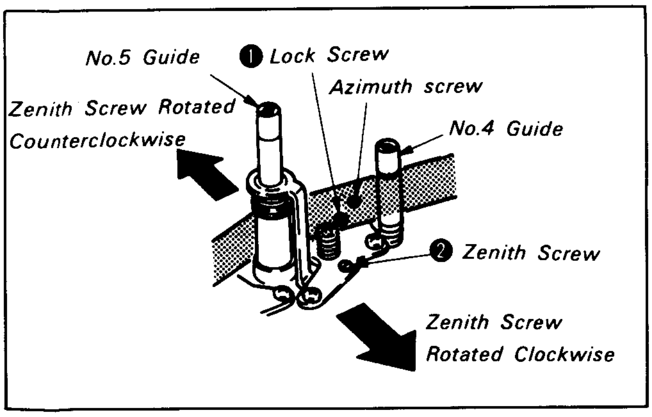

No.5 Guide
❶ Lock Screw
Azimuth screw
Zenith Screw Rotated Counterclockwise
No.4 Guide
❷ Zenith Screw
Zenith Screw Rotated Clockwise

Fig. 8-78.

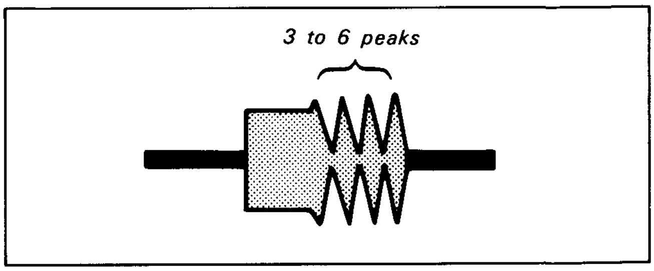


Fig. 8-79.

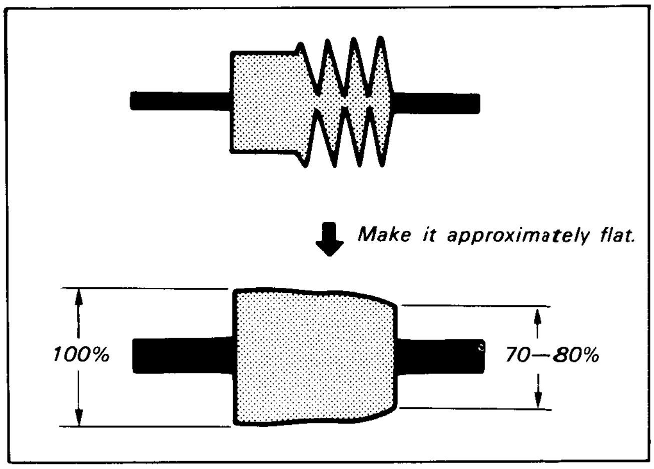

Make it approximately flat.
100%
70—80%

Fig. 8-80.

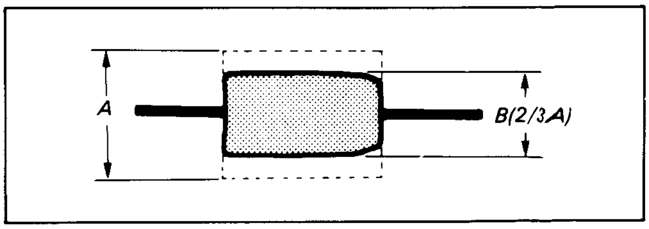


Fig. 8-81.

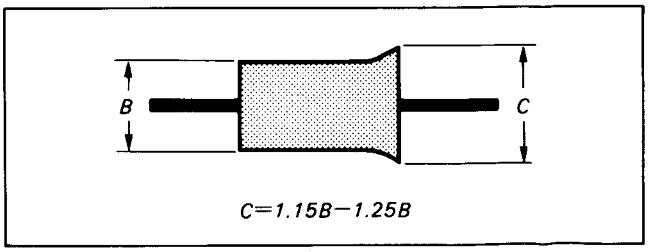

B
C
C=1.15B−1.25B

Fig. 8-82.

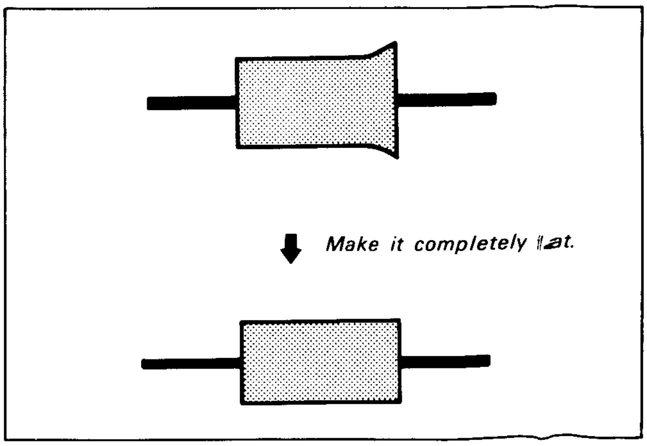

Make it completely flat.

Fig. 8-83.

8-4-5. Checking After Adjustment

1. Tracking check

1) Play back the alignment tape (WR5-1N) for tracking.
2) Set the SEL switch of the track shift & monitor jig to ON, and turn track shift knob until the RF waveform amplitude is 2/3. (8-84)

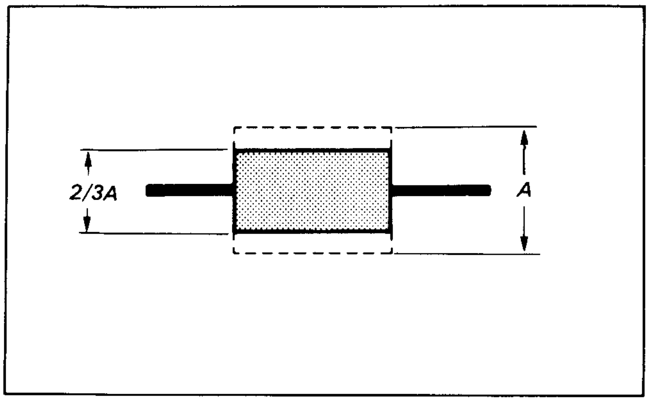


Fig. 8-84.

3) Confirm that the RF waveform amplitude minimum value E min at this time is more than 75% of maximum value. (E max.)

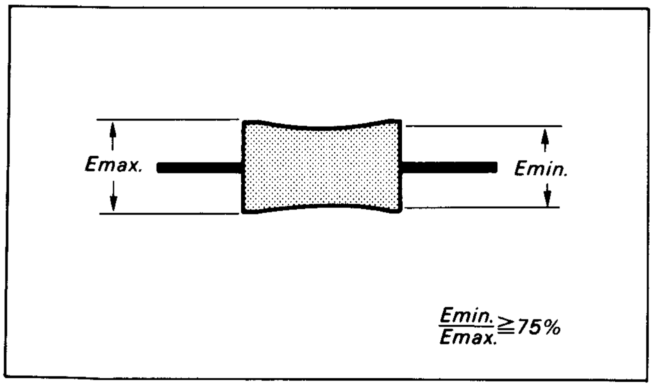

Emax.
Emin.
Emin./Emax. ≥75%

Fig. 8-85.

4) Check that the fluctuation amount of RF waveform entrance and exit sides both is as shown in Fig. 8-85.

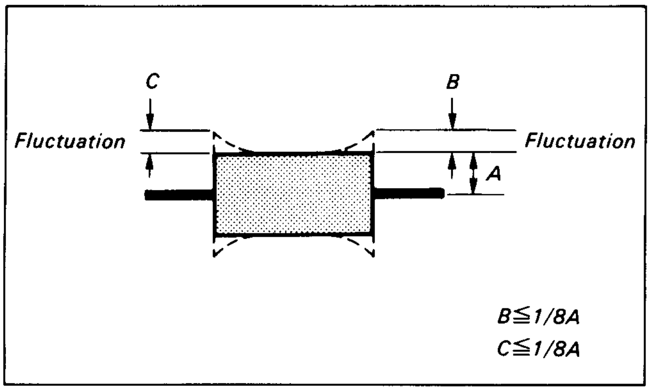

C
B
Fluctuation
Fluctuation
A
B≦1/8A
C≦1/8A

Fig. 8-86.

5) Set the SEL switch of the track shift & monitor jig to OFF.
6) Set up the REV mode and confirm that the waveform noise pitches are uniform. If not adjust as follows. (Fig. 8-87)

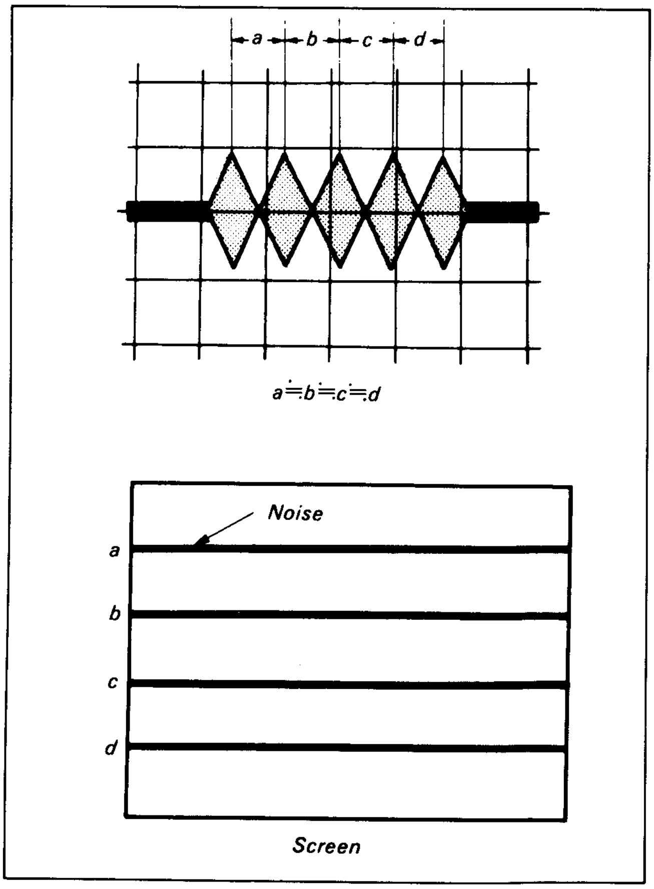

a
b
c
d
a≒b≒c≒d
Noise
a
b
c
d
Screen

Fig. 8-87.

[Narrow noise pitch on entrance side (upper screen)]
(Fig. 8-88)
Confirm that the RF waveforms are flat in the PLAYBACK mode.

Waveform is not flat:
Adjust the heights of No.2 and 3 guides as in 8-4-3. Entrance Side Adjustment.

Waveform is flat:
Check again by performing No.1 guide height and No.2 guide zenith adjustment according to 8-4-3. Entrance Side Adjustment.

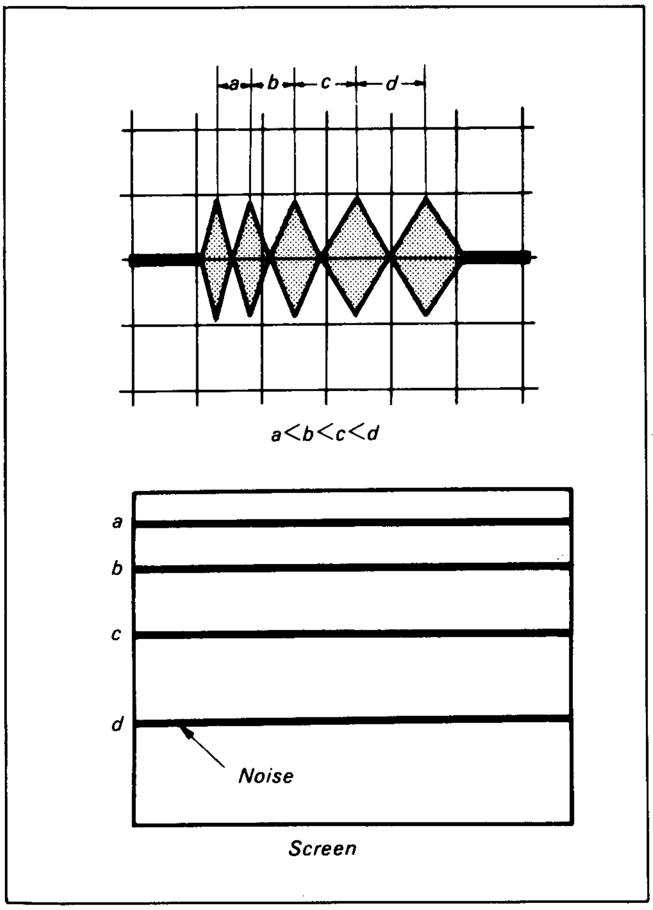


Fig. 8-88

[Narrow noise pitch on exit side (lower screen)]
(Fig. 8-89)
Set up the PLAYBACK mode and adjust No. 4 and 5 guide heights in accordance with 8-4-4. Exit Side Adjustment.

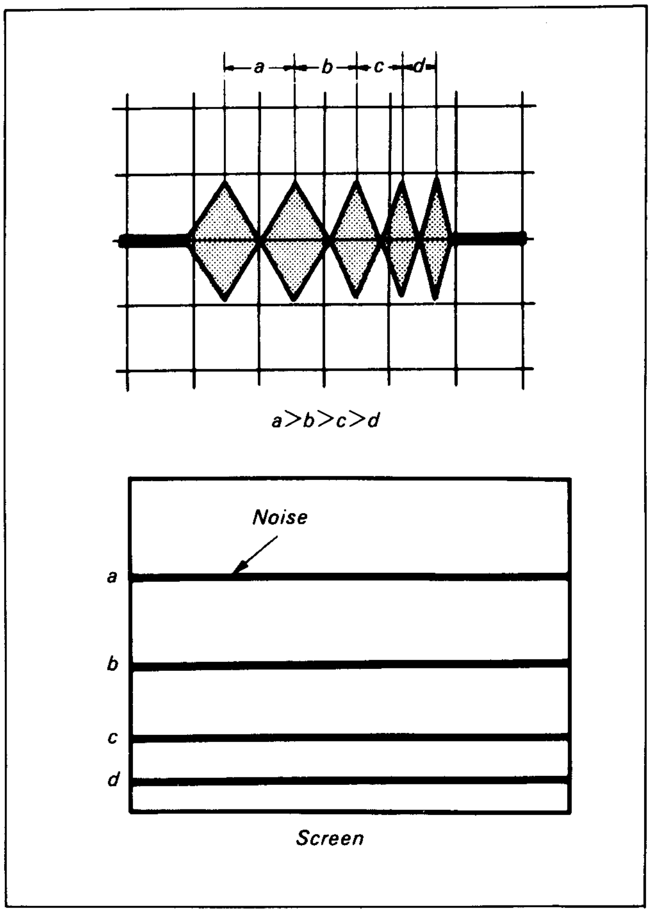


Fig. 8-89

[Wide noise pitch on exit side (lower screen)]

(Fig. 8-90)

Set up the PLAYBACK mode and confirm that the RF waveform is flat.

Waveform is not flat:

Adjustment height of No.4 and 5 guides in accordance 8-4-4. Exit Side Adjustment.

Waveform is flat:

Rotate the guide lower toothed wheel counterclockwise with No.6 guide lock jig (Ref. No.J-11) to loosen the toothed wheel. Rotate No.6 guide counterclockwise 45° to tighten the lower toothed wheel. Confirm the RF waveform of the REV mode again. (Fig. 8-91)

Note: Wrinkles may be caused in Part Ⓐ between the capstan spindle and No.5 guide, if No.6 guide is raised excessively. Confirm that no wrinkles have been caused. (Fig. 8-92)

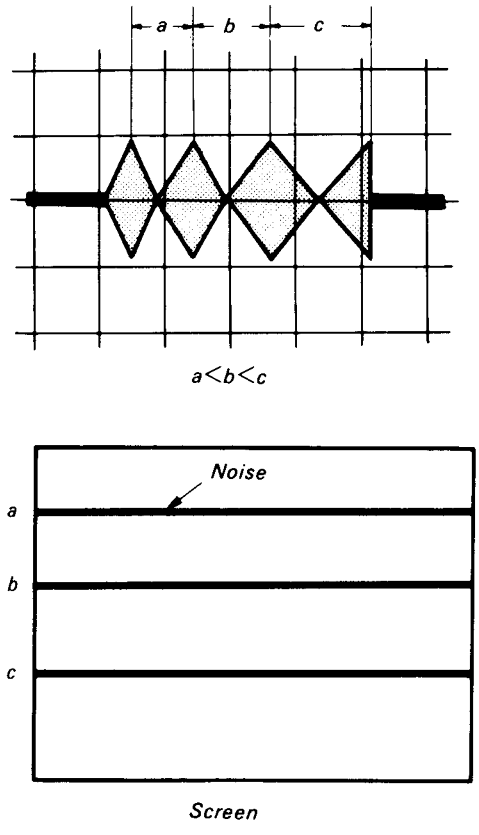

a
b
c
a<b<c
Noise
a
b
c
Screen

Fig. 8-90

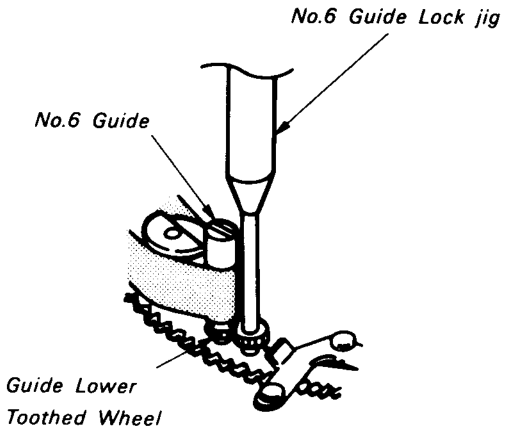

No.6 Guide Lock jig
No.6 Guide
Guide Lower
Toothed Wheel

Fig. 8-91

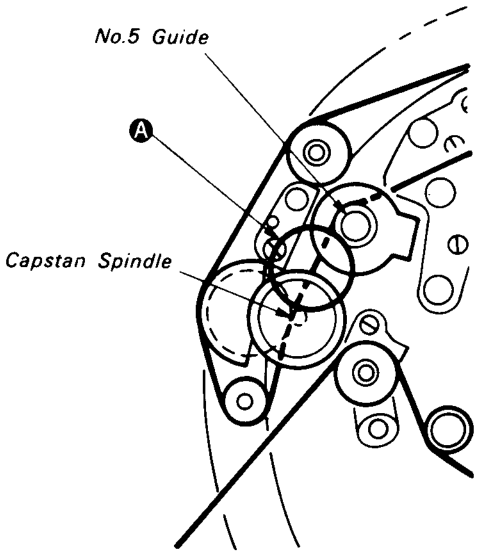

No.5 Guide
A
Capstan Spindle

Fig. 8-92

2. Checking rising edge

1) Check that the RF waveform rises horizontally during playback after finishing loading, after CUE/REV, and during playing back after FF. If not, adjust as follows.

[Noise emits from the exit side (lower screen) with rising during playback after finishing loading]
(Fig. 8-93)
Check that the FWD back tension is not too low.
If too low:
Readjust as instructed in 8-3-21. FWD Back Tension Adjustment.
If normal:
Rotate the azimuth screw of the pinch roller clockwise 15° at a time and adjust after rechecking the rising edge. (Fig. 8-94)

[Noise emits from the exit side (lower screen) with rising during playback after REV]
(Fig. 8-93)
Loosen the guide lower toothed wheel of No.6 guide using No.6 guide lock jig, rotate No.6 guide 90° counterclockwise to tighten the toothed wheel, then recheck the rising edge.

Note: Wrinkles may be caused in Part Ⓐ of Fig. 8-92, if No.6 guide is raised excessively at this time, between the capstan spindle and No.5 guide, so check that no wrinkles are caused.

[Noise emits from the exit side (lower screen) with rising during playing back after FF]
(Fig. 8-93)
Confirm that the FWD back tension is not too low.
If too low:
Readjust as required in 8-3-21. FWD Back Tension Adjustment.
If normal:
Remote the azimuth screw of the pinch roller clockwise by 5° at a time and adjust after checking the rising edge. (Fig. 8-94)

Note: Be sure to check play rising after finishing loading in case an adjustment is made.

3. Tape running check

In playback and REV modes, there should be no spaces and curl should be within 0.3 mm for No.1, 2 and 5 guides at No.1—No.6 guide flanges (Fig. 8-95). Check also that there is no space or curl at No.3, 4 and 6 guides.

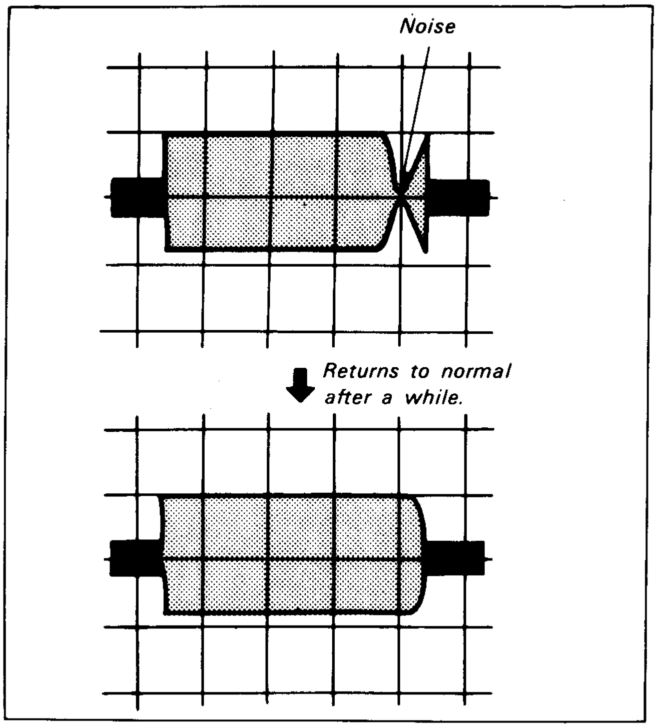

Noise
Returns to normal after a while.

Fig. 8-93

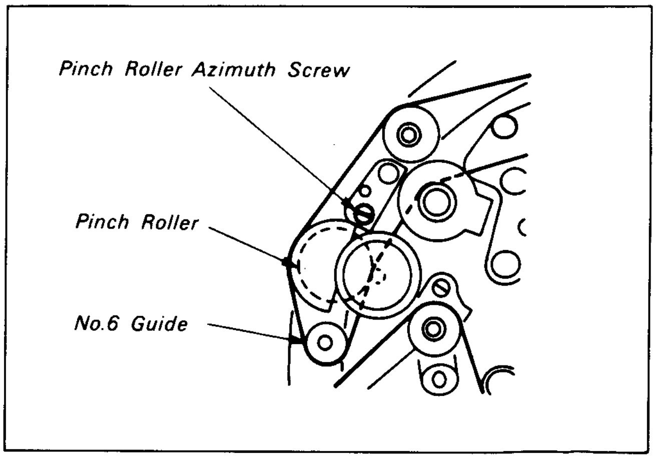

Pinch Roller Azimuth Screw
Pinch Roller
No.6 Guide

Fig. 8-94

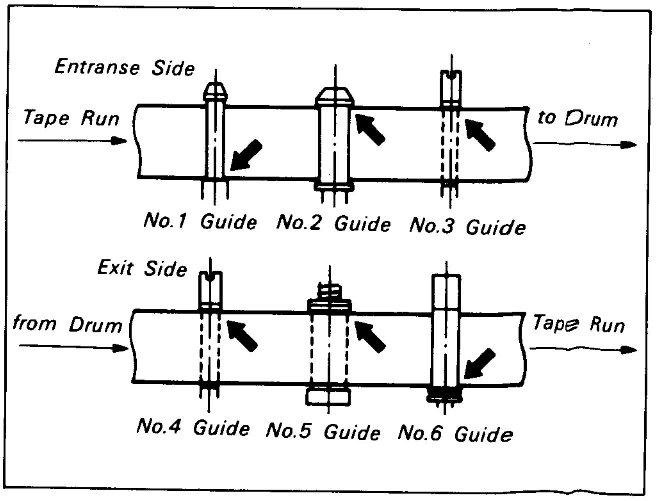

Entranse Side
Tape Run
to Drum
No.1 Guide
No.2 Guide
No.3 Guide
Exit Side
from Drum
Tape Run
No.4 Guide
No.5 Guide
No.6 Guide

Fig. 8-95

SECTION 9
VIDEO ADJUSTMENTS

During the adjustment, see the parts arrangement diagram relevant to the adjustment on page 348.

For the adjustment of the VTR block, use the following measuring equipment.

[Equipment to be used]

1) Monitor TV
2) AC adaptor or T/T unit
3) Dual trace oscilloscope of over 10 MHz band which incorporates delay mode (Unless otherwise specified, use 10 : 1 probe.)
4) Frequency counter
5) Pattern generator incorporates video output terminal
6) Digital voltmeter
7) Audio generator
8) Audio level meter
9) Audio distortion meter
10) Audio attenuator
11) Regulated-DC power supply
12) Alignment tape

    For tracking adjustment (WR5-1N)

        Part Code: 8-967-995-01

    For video frequency characteristics adjustment (WR5-2N)

        Part Code: 8-967-995-11

    For operation confirmation

        Part Code: 8-967-995-31 (WR5-3NL)

        Part Code: 8-967-995-22 (WR5-3NSP)

[Precautions for adjustment]

In the video block adjustment, it can be performed even by removing the camera block and EVF block except for "Battery down adjustment" of the system control system adjustment. When removing the camera and EVF blocks, disconnect the following seven connectors.

1.	EM-1 board	CN402 (BLK)
2.	EM-1 board	CN905 (YEL)
3.	EM-1 board	CN906 (BLK)
4.	SS-64 board	CN303 (WHT)
5.	SS-64 board	CN308 (WHT)
6.	AU-24 board	CN403 (RED)
7.	CP-18 board	CN704

In the servo system adjustments; namely, "MOTOR POWER voltage adjustment", "Notch filter f₀ adjustment" and "ATF BPF balance adjustment" and almost all adjusting items of the video system adjustments, it is necessary to perform the adjustments for the AU-24, RP-39, and VI-21 boards. In this case, moreover, the adjustment should be performed by removing CN405 (WHT) on the AU-24 board.

[Connection of equipments]

Unless otherwise specified, perform the adjustment by connecting the measuring equipment as shown in figure below.

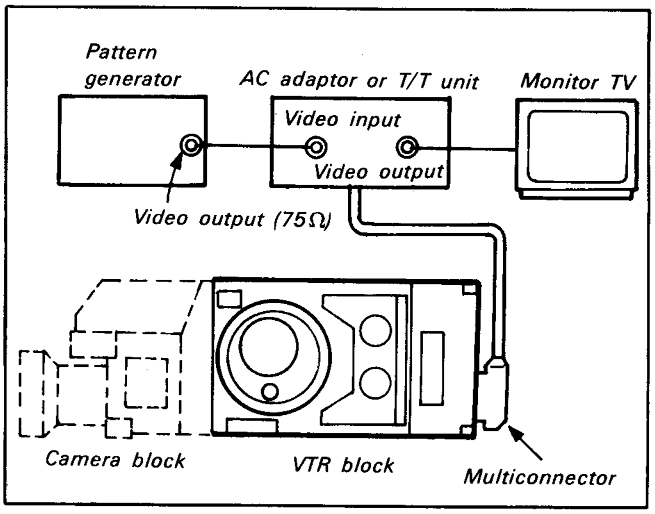


Fig. 9-1.

[Set-up during adjustment]

Since the video output signal obtained from the pattern generator is used as the adjusting signal of the VTR block adjustment, it is necessary that this video output signal has to be within the specification. Connect an oscilloscope to Pin ① (VIDEO IN) of CN208 on the VI-21 board and make sure that the amplitude of the video SYNC signal is approximately 0.3V, that the video block is approximately 0.7V, that the burst signal is 0.3V with flat characteristics, and the signal level ratio between the burst signal and "Red" signal is 0.30 : 0.66.

The video signal (color bar) used in the VTR block adjustment is as shown in Fig. 9-2.

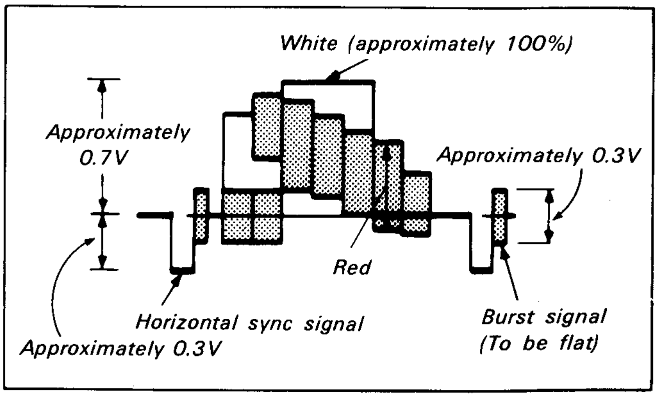
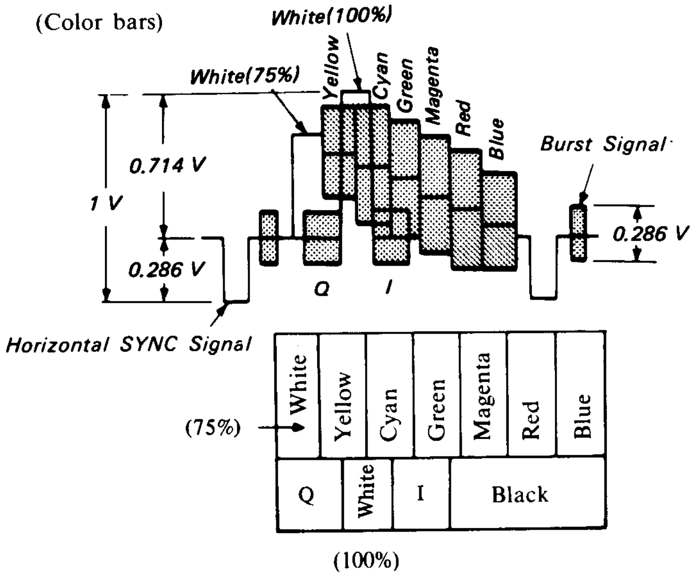


Fig. 9-2. Color bar signal of pattern generator

[Alignment tape]

Tape	Content	Use
Tracking (WR5-1N)	1. Recording area: PCM — video 2. Recording content: CH2: 1 MHz linearity adjustment signal (CH1: 9 MHz)	Drum linearity adjustment
Video Frequency Response (WR5-2N)	1. Recording area: Video 2. Recording content: RF sweep 0 to 10 MHz 3. Marker: 1, 3.58, 5.5 and 7 MHz	Frequency characteristic adjustment
Operation Check SP mode (WR5-3NSP) LP mode (WR5-3NL) Note: PCM area is not included in WR5-3NL.	1. Recording area: Video 2. Recording content: ■ Video area • Video signals Color bars 10 sec } Iterative Monoscope 8 sec (Color bars)  White(100%) White(75%) Yellow Cyan Green Magenta Red Blue Burst Signal 0.714 V 1 V 0.286 V Q I 0.286 V Horizontal SYNC Signal (75%) White Yellow Cyan Green Magenta Red Blue Q White I Black (100%) • Audio signals (AFM) 400 Hz 60% modulation ■ PCM area (WR5-3NSP only) • Audio signals (PCM) 1kHz 0dBs 10sec } 20Hz −6dBs 2sec } Iterative 400Hz −6dBs 4sec } 14kHz −0.7dBs 2sec }	Operation check

[T/T unit or AC adaptor I/O level and impedance]

Video input Pin jack
  Input signal: 1 Vp-p, 75Ω unbalance, negative SYNC
Video output Pin jack
  Output signal: 1 Vp-p, 75Ω unbalance, negative SYNC
Audio input Pin jack
  Input level: −10 dBs (0 dBs=0.775 Vrms)
  Input impedance: Over 47 kΩ
Audio output Pin jack
  Specified output: −10 dBs
  Loading impedance: Over 47 kΩ

9-1. POWER SUPPLY CHECK (VI-21 BOARD)

9-1-1. REG 5V Check

Mode	Stop
Measurement Point	Positive probe: TP214 (AUDIO 5V) TP217 (VIDEO 5V) TP226 (S/S 5V) Negative probe: TP227 (GND)
Measuring Instrument	Digital voltmeter
Specified Value	5.0±0.15Vdc

Checking method:

1) It should be 5.0±0.15Vdc.

9-2. SYSTEM CONTROL ADJUSTMENT

9-2-1. Battery Down Adjustment (TS-55, SK-12 Boards)

Mode	Camera mode REC
Object	Arbitrary
Measurement Point	TP502 on TS-55 board ($\overline{\text{BATT DOWN}}$)
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV506 on TS-55 board
Specified Value	5.77±0.01Vdc.

Connection:

1) Remove multiconnector and connect the regulated-DC power supply and digital voltmeter as shown in Fig. below.

Note: Be sure to perform the adjustment by connecting the camera block.

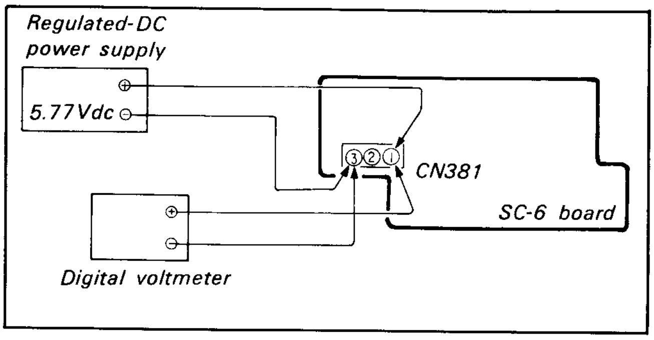


Fig. 9-3.

Adjusting method:

1) Connect TP301 ($\overline{\text{TEST}}$) on the SK-12 board and GND with a jumper and set to test mode.
2) Adjust the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes 5.77±0.01Vdc. (VTR is in REC mode)
3) Turn slowly RV506 on the TS-55 board and set the DC level of TP502 on the TS-55 board to the point where it is about to turn "L" from "H".
4) Remove the jumper.

Checking method:

Perform the following checks and if the results are not satisfied, repeat the checks again.

1) Adjust the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes 5.90±0.01Vdc. (VTR is in REC mode)
2) Make sure that the 🪫 mark of the LCD does not light on and the TALLY lamp does not flicker.
3) Decrease the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes 5.85±0.01Vdc.
4) Make sure that the 🪫 mark of the LCD and the TALLY lamp flicker every other second.
5) Decrease the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes 5.75±0.01Vdc.
6) Make sure that the VTR is stopped and the power supply is turned OFF.

9-3. SERVO SYSTEM ADJUSTMENT

9-3-1. MOTOR POWER Voltage Adjustment (SS-64 Board)

Mode	Stop
Measurement Point	Pin ⑩ of CN501
Measuring Instrument	Digital voltmeter
Adjusting Element	RV301
Specified Value	5.30±0.05Vdc

Adjusting method:
1) Adjust with RV301 so that it becomes 5.30±0.05Vdc.

9-3-2. Notch Filter f_0 Adjustment (SS-64 Board)

Mode	Stop
Signal	See Fig. 9-4
Measurement Point	
Measuring Instrument	Oscilloscope, audio generator, and frequency counter
Adjusting Element	RV501
Specified Value	Signal output of 30 Hz is less than 350 mVp-p

Connection:

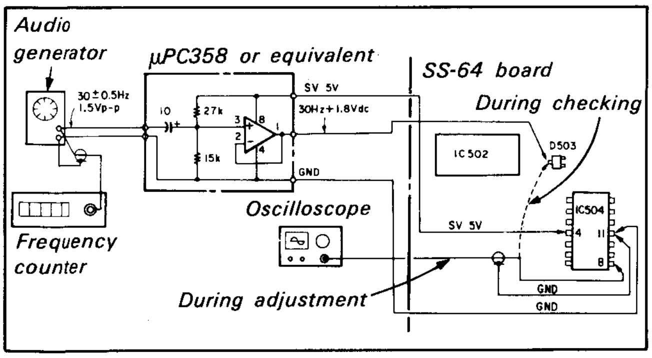


Fig. 9-4.

Adjusting method:
1) Adjust the oscillation frequency of the audio generator to 30±0.5 Hz.
2) Connect an oscilloscope to D503 and check the following two points: (See Fig. 9-4)
   1. Make sure that the DC level is approximately 1.8Vdc when the audio generator is turned OFF.
   2. Adjust the output level of the audio generator so that the 30 Hz sine wave signal level becomes 0.5 Vp-p.
3) Connect an oscilloscope to Pin ⑦ of IC504.
4) Adjust with RV501 so that the 30 Hz signal level becomes minimum.

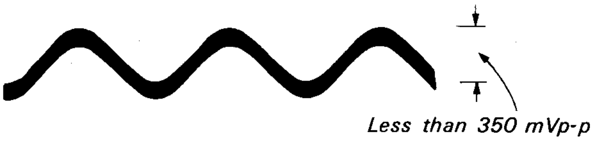


Fig. 9-5. 30 Hz notch filter adjustment

9-3-3. Drum Free Speed Adjustment (TS-55 Board)

Mode	REC
Signal	Arbitrary
Measurement Point	Pin ① of (ADE) CN507
Measuring Instrument	Digital voltmeter
Adjusting Element	RV501
Specified Value	1.90±0.1Vdc

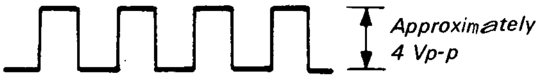
Adjusting method:
1) Adjust with RV501 so that it becomes 1.90±0.1Vdc.

9-3-4. Capstan Free Speed Adjustment (TS-55, RP-39 Boards)

Mode	Playback
Signal	Arbitrary tape
Measurement Point	Pin ⑥ (CFG) of CN507 on TS-55 board
Measuring Instrument	Frequency counter
Adjusting Element	SP mode: RV502 on TS-55 board LP mode: RV503 on TS-55 board
Specified Value	SP mode: 960±1 Hz LP mode: 480±1 Hz

Connection:
1) Connect Pin ⑯ (TP484: SL CHECK) and GND on the RP-34 board on the RP-39 board with an electrolytic capacitor. (GND is on the negative side of the capacitor.)
2) Connect Pin ③ (ATF LOCK) and GND of CN507 on the TS-55 board with a jumper.

Adjusting method:
The adjusting element of LP mode is shown in parentheses [ ].
1) During the adjustment of LP mode, connect TP302 (SP/$\overline{\text{LP}}$) and GND on the SK-12 board with a jumper.
2) Turn "VTR POWER" from OFF to ON.
3) Adjust with RV502 [RV503] so that it becomes 960±1 Hz [480± 1 Hz] in the playback mode.



960±1 Hz (SP mode)
480±1 Hz (LP mode)

Fig. 9-6.

9-3-5. Switching Position Adjustment (TS-55 board)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-3NSP)
Measurement Point	CH-1: TP208 on VI-21 board (Pin ① of CN206: VIDEO OUT) CH-2: RP-39 board Pin ② of CN483 (RF SWP)
Measuring Instrument	Oscilloscope
Adjusting Element	RV507 on TS-55 board
Specified Value	6.5±0.3H (410±20 μsec)

Adjusting method:

1) Adjust with RV507 on the TS-55 board so that it becomes 6.5±0.3H (410±20 μsec).

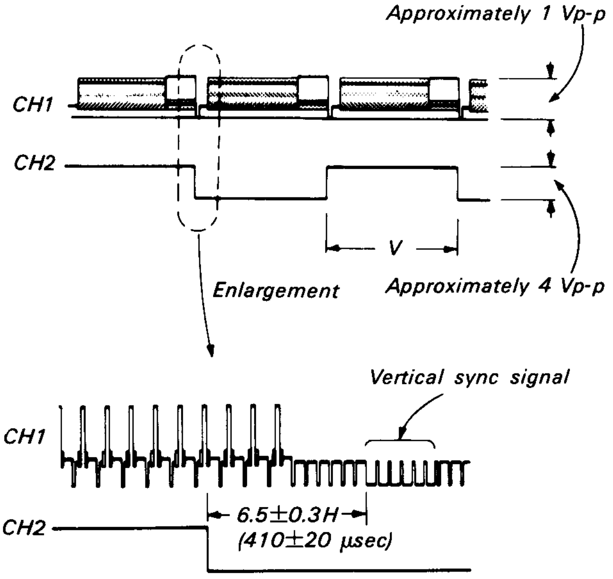

Approximately 1 Vp-p
CH1
CH2
V
Enlargement
Approximately 4 Vp-p
Vertical sync signal
CH1
CH2
6.5±0.3H
(410±20 μsec)

Fig. 9-7. Switching position adjustment

9-3-6. ATF BPF Balance Adjustment (SS-64 Board)

Mode	Playback
Signal	See Fig. 9-8
Measurement Point	
Measuring Instrument	Oscilloscope, audio generator, and frequency counter
Adjusting Element	RV502
Specified Value	Be sure that the 16 kHz signal level (Pin ⑪ of IC509) is equivalent to the 47 kHz signal level (Pin ⑫ of IC509).

Connection:

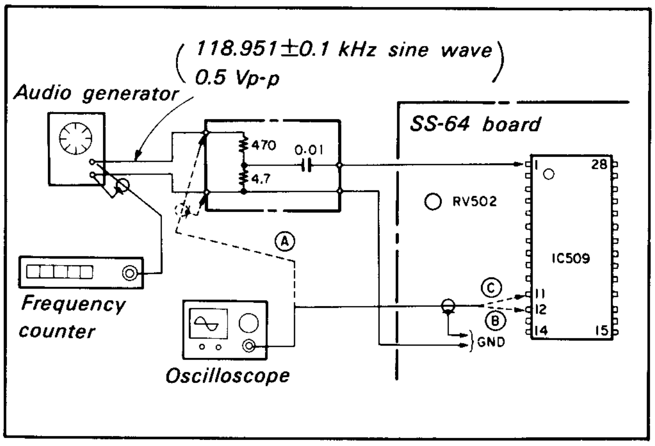

118.951±0.1 kHz sine wave
0.5 Vp-p
Audio generator
470
0.01
4.7
SS-64 board
RV502
IC509
1
28
11
12
14
15
Ⓐ
Ⓑ
Ⓒ
GND
Frequency counter
Oscilloscope

Fig. 9-8.

Adjusting method:

1) Check the output level of the audio generator with an oscilloscope and adjust so that the sine wave output level becomes approximately 0.5 Vp-p. (Fig. 9-8 Ⓐ)
2) Adjust the oscillation frequency of the audio generator so that reading of the frequency counter becomes 118.951± 0.1 kHz.
3) Play back an arbitrary tape.
4) Connect an oscilloscope to Pin ⑫ of IC509 and read the 47 kHz signal level. (Approximately 2 Vp-p) (Fig. 9-8 Ⓑ)
5) Connect an oscilloscope to Pin ⑪ of IC509. (Fig. 9-8 Ⓒ)
6) Adjust with RV502 so that the 16 kHz signal level becomes equivalent to the 47 kHz signal level.

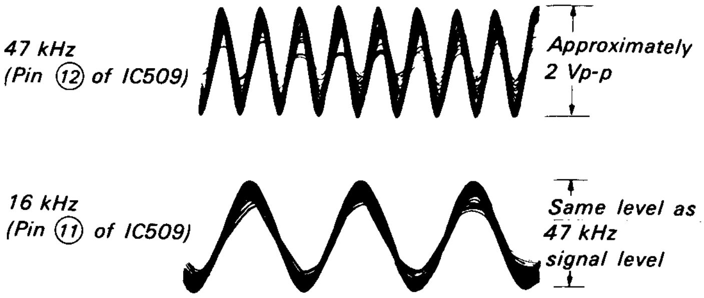

47 kHz
(Pin ⑫ of IC509)
Approximately
2 Vp-p
16 kHz
(Pin ⑪ of IC509)
Same level as
47 kHz
signal level

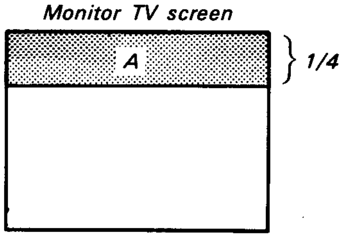
Fig. 9-9.

9-3-7. Playback Pause Adjustment (TS-55 Board)

Mode	Playback pause
Signal	A tape onto which color bar signal has been video-recorded by itself in SP mode.
Measurement Point	Confirm with monitor TV screen picture
Measuring Instrument	
Adjusting Element	RV508
Specified Value	Be sure that there is no noise on the monitor TV screen except for the upper 1/4 section. (See Fig. 9-10)

Adjusting method:

1) Set to playback mode, and set to playback pause mode when the playback mode is stabilized.
2) Be sure that there is no noise on the monitor TV screen except for the upper section. (See Fig. 9-10)
3) When the specified value is not satisfied, repeat 1) and 2) by turning RV508.



Specification: Noise should not be emitted other than the A section.

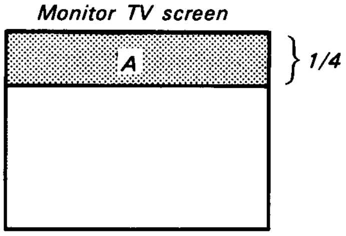
Fig. 9-10.

9-3-8. Slow Adjustment (TS-55 Board)

Mode	1/30 Slow playback
Signal	A tape onto which color bar signal has been video-recorded by itself in SP mode.
Measurement Point	Confirm with monitor TV screen picture
Measuring Instrument	
Adjusting Element	RV504
Specified Value	Be sure that there is no noise on the monitor TV screen except for the upper 1/4 section. (See Fig. 9-11)

Adjusting method:

1) Set to playback pause mode.
2) Press the FRAME button (S312 on the SK-12 board) continuously and set to 1/30 slow playback mode.
3) Adjust with RV504 so that noise on the monitor screen is hidden into its upper section.



Specification: Noise should not be emitted other than the A section.

Fig. 9-11.

9-4. VIDEO BLOCK ADJUSTMENT

The adjustment of the video system should in principle be followed the undermentioned adjustment procedure.
The color video signal supplied from the pattern generator is utilized to the video input signal of the video system adjustment in recording mode. Make sure to check that the SYNC signal and color burst signal are matched with those in the set-up of during the adjustment of as shown in Fig. 9-2.

[Adjustment procedure]

1) Playback frequency characteristics adjustment
2) Flying erase check
3) Crystal oscillator f₀ adjustment
4) Y/C separation adjustment
5) Y comb type filter adjustment
6) SYNC AGC adjustment
7) VIDEO OUT level adjustment
8) PB Y level adjustment
9) Y FM carrier frequency adjustment
10) Y FM deviation adjustment
11) AC clipping adjustment
12) 378f_H VCO adjustment
13) Chroma emphasis f_0 adjustment
14) Carrier balance adjustment
15) REC Y recording current adjustment
16) REC C recording current adjustment
17) REC AFM recording current adjustment
18) REC ATF recording current adjustment

9-4-1. Playback Frequency Characteristics Adjustment (RP-34/RP-39 Boards)

The adjusting element of CH2 is shown in parentheses [ ].

Mode	Playback
Signal	Alignment tape: For frequency characteristics adjustment (WR5-2N)
Measurement Point	Pin ④ [Pin ③] of CN483 on RP-39 board External trigger: Pin ② of CN483 Trigger slope: + [−]
Measuring Instrument	Oscilloscope
Adjusting Element	RV003 [RV004] on RP-34 board
Specified Value	3.5 MHz level : 5.5 MHz level =4 : 3

Adjusting method:

1) Adjust with RV003 [RV004] on the RP-34 board so that the level ratio of 3.58 MHz and 5.5 MHz becomes 4 : 3 [4 : 3].

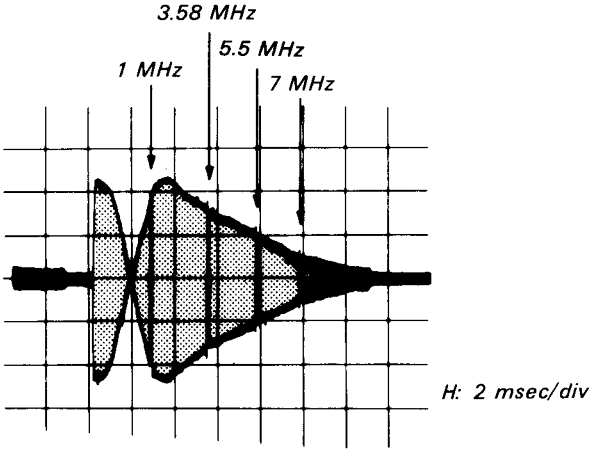


Fig. 9-12. Playback frequency characteristics adjustment

9-4-2. Flying Erase Check (RP-39 Board)

Mode	REC
Signal	Arbitrary
Measurement Point	Pin ① of CN481 (FE(X))
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency: Over 5 MHz Voltage: 6.3 to 9.3 Vp-p

Checking method:

1) Make sure that the oscillation frequency is over 5 MHz and oscillation voltage is 6.3 to 9.3 Vp-p.

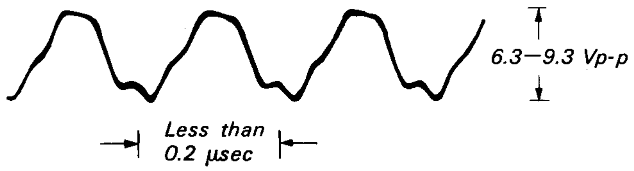


Fig. 9-13.

9-4-3. Crystal Oscillator fo Adjustment (VC-10/VI-21 Boards)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-3NSP)
Measurement Point	TP210 on VI-21 board (Pin ⑩ on VC-10 board)
Measuring Instrument	Frequency counter
Adjusting Element	CV001 on VC-10 board
Specified Value	3579545±30 Hz

Note: Connect the frequency counter through a buffer of high impedance (approximately 10 MΩ) and low capacitance (less than 10 pF)

Adjusting method:

1) Adjust with CV001 on the VC-10 board so that it becomes 3597545±30 Hz.

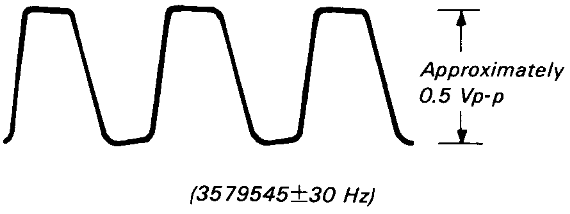


Fig. 9-14. Crystal oscillator fo adjustment

9-4-4. Y/C Separation Adjustment (VD-5/VI-21 Boards)

Mode	E-E
Signal	Color bar
Measurement Point	TP211 on VI-21 board (Pin ㉕ on VD-5 board)
Measuring Instrument	Oscilloscope
Adjusting Element	RV002 on VD-5 board and LV201 on VI-21 board
Specified Value	Minimum residual chroma component

Adjusting method:

1) Adjust with RV002 on the VD-5 board and LV201 on the VI-21 board alternately so that the residual chroma component becomes minimum.

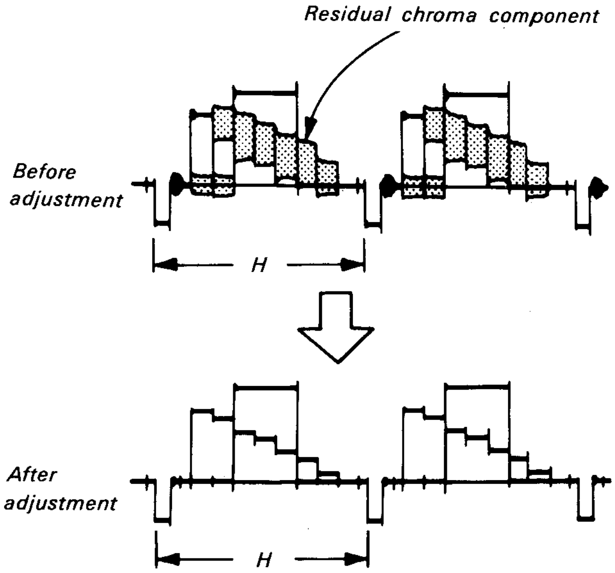


Fig. 9-15. Y/C separation adjustment

9-4-5. Y Comb Type Filter Adjustment (VI-21 Board)

Mode	E-E
Signal	Color bar
Measurement Point	TP213 on VI-21 board (Pin ⑫ on VD-5 board)
Measuring Instrument	Oscilloscope
Adjusting Element	RV203 on VI-21 board
Specified Value	The amplitude between the white (75%) and the pedestal is 50±25 mVp-p.

Note: Be sure to connect a 22 kΩ of resistor in series between the TP213 and 10 : 1 probe.

Adjusting method:

1) Adjust with RV203 on the VI-21 board so that the amplitude between the white (75%) and pedestal becomes 50±25 mVp-p.

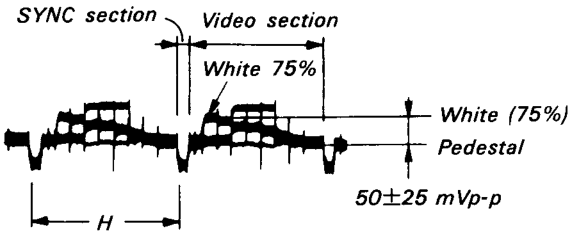


Fig. 9-16. Y comb type filter adjustment

9-4-6. SYNC AGC Adjustment (VY-8/VI-21 Boards)

Mode	E-E
Signal	Color bar
Measurement Point	TP212 on VI-21 board (Pin ⑮ on VD-5 board)
Measuring Instrument	Oscilloscope
Adjusting Element	RV002 on VY-8 board
Specified Value	0.50±0.01 Vp-p

Adjusting method:

Adjust with RV002 on VY-8 board so that it becomes 0.50±0.01 Vp-p.

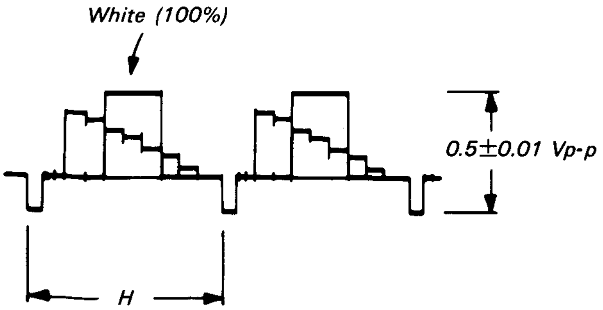


Fig. 9-17. SYNC AGC adjustment

9-4-7. VIDEO OUT Level Adjustment (VY-8/VI-21 Boards)

Mode	E-E
Signal	Color bar
Measurement Point	TP208 on VI-21 board (Pin ① on CN206: VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV001 on VY-8 board
Specified Value	$1.00^{+0.025}_{-0.05}$ Vp-p

Note: Be sure that the multiconnector has been connected to the T/T unit or AC adaptor.

Adjusting method:

1) Adjust with RV001 on the VY-8 board so that it becomes $1.00^{+0.025}_{-0.05}$ Vp-p.

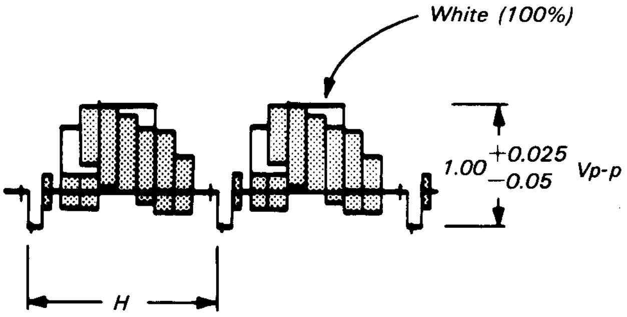


Fig. 9-18. VIDEO OUT level adjustment

9-4-8. PB Y Level Adjustment (VY-8/VI-21 Boards)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-3NSP) Color bar section
Measurement Point	TP208 on VI-21 board (Pin ① of CN206: VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV006 on VY-8 board
Specified Value	$100^{+0.025}_{-0.05}$ Vp-p

Note: 1. Be sure that the multiconnector has been connected to the T/T unit or AC adaptor.

2. Be sure that the EDIT switch (S310 on SK-12 board) is turned OFF.

Adjusting method:

1) Adjust with RV006 on the VY-8 board so that it becomes $1.00^{+0.025}_{-0.05}$ Vp-p.

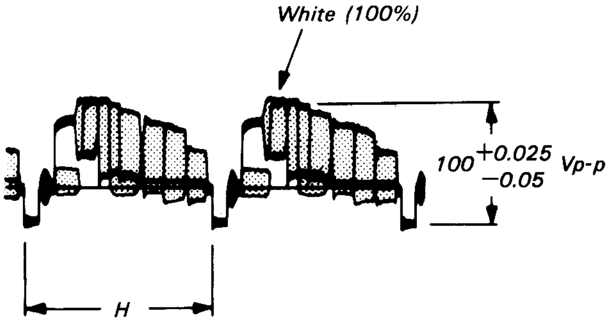


Fig. 9-19. PB Y level adjustment

9-4-9. Y FM Carrier Frequency Adjustment (VY-8/VI-21 Boards)

Mode	E-E
Signal	Non-signal
Measurement Point	TP229: Pin ㉖ on VY-8 board (REC Y RF)
Measuring Instrument	Frequency counter
Adjusting Element	RV003 on VY-8 board
Specified Value	4.20±0.04 MHz

Adjusting method:

1) Set RV004 (AC CLIP) on the VY-8 board to the mechanical center. (The slide pin of RV004 is approximately 2.7Vdc.)
2) Adjust with RV003 on the VY-8 board so that it becomes 4.20±0.04 MHz.
3) Be sure to perform the "Deviation adjustment" and "AC CLIP adjustment".

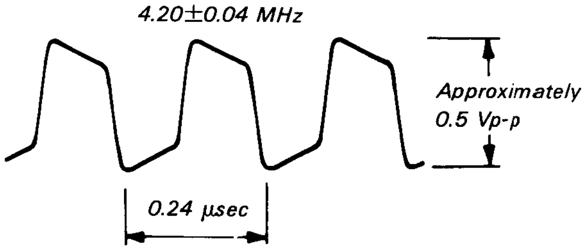


Fig. 9-20. Y FM currier frequency adjustment

9-4-10. Y FM Deviation Adjustment (VY-8/VI-21 Boards)

Mode	Recording and playback
Signal	Color bar
Measurement Point	TP208 on VI-21 board (Pin ① of CN206: VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV005 on VY-8 board
Specified Value	Playback level: $1.00^{+0.025}_{-0.05}$ Vp-p

Note: 1. Be sure that the "VIDEO OUT level adjustment", "PB Y level adjustment" and "Y FM carrier frequency adjustment" have been completed.
2. Be sure the multiconnector is connected to the T/T unit or AC adaptor.
3. Be sure the EDIT switch (S310 on the SK-12 board) is turned OFF.

Adjusting method:
1) Record the color bar signal.
2) Play back the recorded level.
3) Be sure to check the playback output level.
Specified value: $1.00^{+0.025}_{-0.05}$ Vp-p
4) When the specified value is not satisfied, repeat 1) to 3) after turning RV005 in the following manner.

	Turning direction of RV005
When larger than the specified value	Clockwise (↻)
When smaller than the specified value	Counterclockwise (↺)

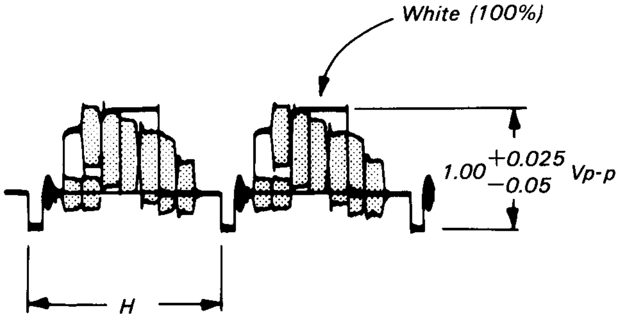


Fig. 9-21. Y FM deviation adjustment

9-4-11. AC Clip Adjustment (VY-8/VI-21 Boards)

Mode	E-E
Signal	Color bar
Measurement Point	TP204 on VI-21 board (Pin ㉜ on VY-8 board)
Measuring Instrument	Oscilloscope
Adjusting Element	RV004 on VY-8 board
Specified Value	250±10%

Adjusting method:
1) Adjust with RV004 on the VY-8 board so that the peak of the white 100% becomes 250%.

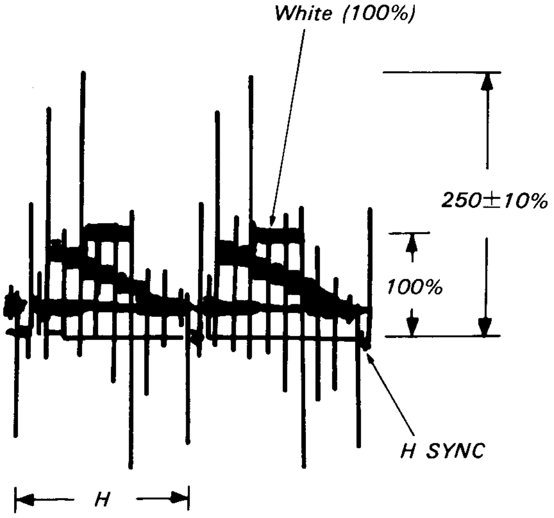


Fig. 9-22. AC clip adjustment

9-4-12. 378f$_H$ VCO Adjustment (VC-10/VI-21 Boards)

Mode	E-E
Signal	Color bar
Measurement Point	TP218 on VI-21 board (Pin ㊼ on VC-10 board)
Measuring Instrument	Digital voltmeter
Adjusting Element	RV001 on VC-10 board
Specified Value	3.0±0.4Vdc

Adjusting method:
1) Adjust with RV001 on the VC-10 board so that it becomes 3.0±0.4Vdc.

9-4-13. Chroma Emphasis f_0 Adjustment (VI-21 Board)

Mode	E-E
Signal	Color bar
Measurement Point	TP215 on VI-21 board (Pin ㊿ on VC-10 board)
Measuring Instrument	Oscilloscope
Adjusting Element	FL201 on VI-21 board
Specified Value	Minimize f_0 component

Connection:

1) Connect TP228 (Pin ㊽ on the VC-10 board: ACC) and TP223 (Pin ① of W202: PB VI RF) with a jumper.

Adjusting method:

1) Adjust with FL201 so that amplitude of the flat section of the chroma signal becomes minimum.

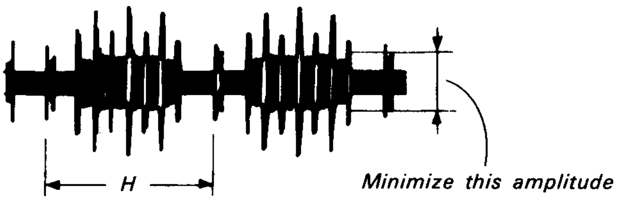


Fig. 9-23. Chroma emphasis f_0 adjustment

9-4-14. Carrier Balance Adjustment (VC-10/VI-21 Boards)

Mode	E-E
Signal	Color bar
Measurement Point	TP216 on VI-21 board (Pin ㊾ on VC-10 board)
Measuring Instrument	Oscilloscope
Adjusting Element	RV002 on VI-10 board
Specified Value	Minimize 4.32 MHz signal component

Adjusting method:

1) Adjust with RV002 on the VC-10 board so that the 4.32 MHz signal component becomes minimum.

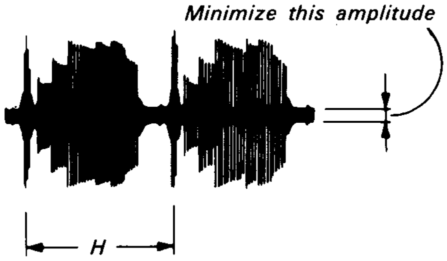


Fig. 9-24. Carrier balance adjustment

9-4-15. REC Y Recording Current Adjustment (RP-34/RP-39 Boards)

Mode	REC
Signal	Non-signal
Measurement Point	TP482 on RP-39 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV001 (REC VI) on RP-34 board
Specified Value	250 mVp-p

Note: Be sure to always perform the recording current adjustment of respective REC C, REC AFM and REL ATF after adjusting the REC Y recording current.

Adjusting method:

1) Adjust with RV001 on the RP-34 board so that it becomes 250 mVp-p.

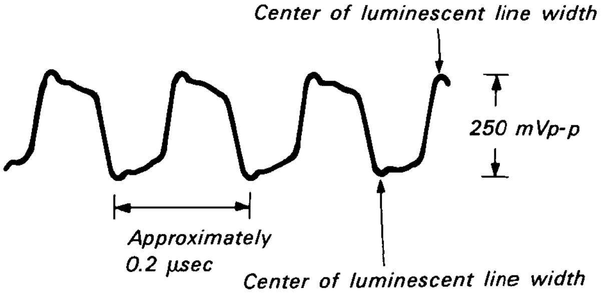

Center of luminescent line width
250 mVp-p
Approximately 0.2 µsec
Center of luminescent line width

Fig. 9-25. REC Y recording current adjustment

9-4-16. REC C Recording Current Adjustment (RP-39/VI-21/AU-24 Boards)

Mode	REC
Signal	Color bar
Measurement Point	TP482 on RP-39 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV201 on VI-21 board
Specified Value	58 mVp-p

Note: 1. Be sure to always perform the recording current adjustment of respective REC AFM and REC ATF after adjusting the REC C recording current.

2. Be sure to use the MP type tape.
(Be sure that Pin ③ of IC201 on the VI-21 board is at "L".)

Connection:

1) Connect the following two points on the VI-21 board with a jumper.
   1. TP229: Pin ㉖ (REC Y RF) and GND (TP201) on the VY-8 board
   2. TP219 (Q220 Ⓔ : REC ATF RF) and GND (TP225)
2) Connect the following point on the AU-24 board with a jumper.
   1. Connector (W204) side pin of RV403 (REC AFM ADJ) and GND (TP409)

Adjusting method:

1) Adjust with RV201 on the VI-21 board so that it becomes 58 mVp-p.

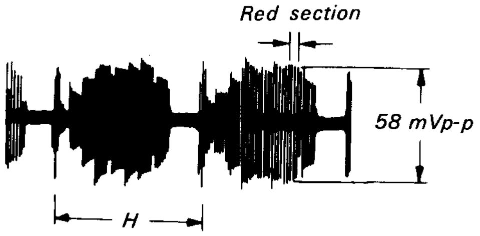


Fig. 9-26. REC C level adjustment

9-4-17. REC AFM Recording Current Adjustment (AU-24, RP-39, VI-21 Boards)

Mode	REC
Signal	Non-signal
Measurement Point	TP482 on RP-39 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV403 on AU-24 board
Specified Value	12.5 mVp-p

Note: 1. Be sure to use the MP type tape.
(Be sure Pin ③ of IC201 on the VI-21 board is at "L").

2. When the TP482 signal level is too small to read, do not use the 10 : 1 probe, but connect it directly a resistor of 100Ω as shown in Fig. below.

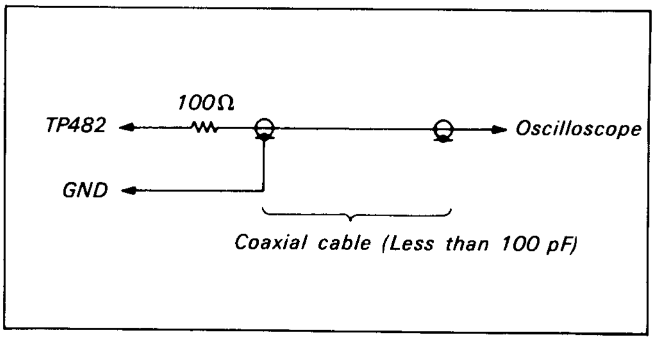


Fig. 9-27.

Connection:

1) Connect the following two points on the VI-21 board with a jumper.
   1. Pin ㉖ on the VY-8 board (REC Y RF) and GND (TP201)
   2. TP219 (Q220 side pin of RV202 (REC ATF ADJ)) and GND (TP225)

Adjusting method:

1) Adjust with RV403 on the AU-24 board so that it becomes 12.5 mVp-p.

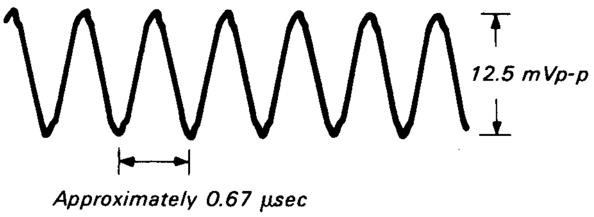


Fig. 9-28. AFM recording current adjustment

9-4-18. REC ATF Recording Current (VI-21, RP-39, AU-24 Boards)

Mode	REC
Signal	Non-signal
Measurement Point	TP482 on RP-39 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV202 on VI-21 board
Specified Value	11.0 mVp-p

Note: 1. Be sure to use the MP type tape.
(Be sure Pin ③ of IC201 on the VI-21 board is at "L".)
2. When the TP482 signal level is too small to read, do not use the 10 : 1 probe, but connect it directly a resistor of 100Ω as shown in Fig. below.

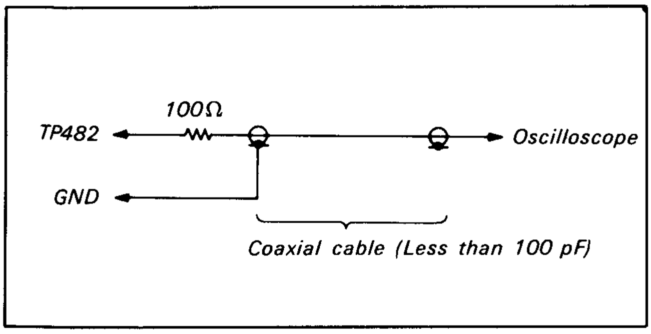

100Ω
TP482
Oscilloscope
GND
Coaxial cable (Less than 100 pF)

Fig. 9-29.

Connection:

1) Connect the following one point on the VI-21 board with a jumper.
Pin ㉖ (REC Y RF) on the VY-8 board and GND (TP201)
2) Connect the following one point on the AU-24 board with a jumper.
Connector (W204) side pin of RV403 (REC AFM ADJ) and GND (TP409)

Adjusting method:

1) Adjust with RV202 on the VI-21 board so that it becomes 11.0 mVp-p.

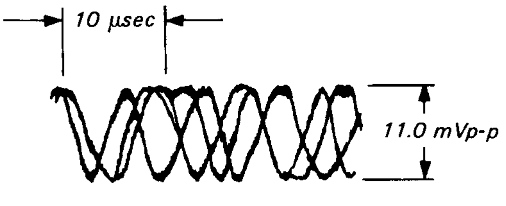

10 μsec
11.0 mVp-p

Fig. 9-30. REC ATF recording current adjustment

9-5. AUDIO SYSTEM ADJUSTMENT

In addition to the video system measuring instruments, connect the audio system ones as shown in Fig. below.

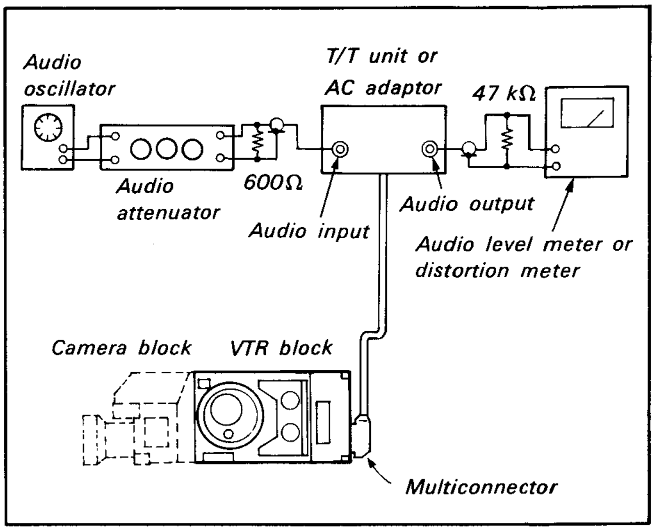

Audio oscillator
T/T unit or AC adaptor
47 kΩ
Audio attenuator
600Ω
Audio input
Audio output
Audio level meter or distortion meter
Camera block
VTR block
Multiconnector

Fig. 9-31.

9-5-1. AFM Carrier Frequency Adjustment (AU-24 Board)

Mode	REC (SP mode)
Signal	Non-signal
Measurement Point	TP403 on AU-24 board (Pin ⑭ of IC401)
Measuring Instrument	Frequency counter
Adjusting Element	RV401
Specified Value	1.500±0.002 MHz

Adjusting method:

1) Adjust with RV401 so that it becomes 1.500±0.002 MHz.

9-5-2. AFM Deviation Adjustment (AU-24 Board)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-3NSP)
Measurement Point	See Fig. 9-31
Measuring Instrument	Audio level meter
Adjusting Element	RV402 on AU-24 board
Specified Value	−10±0.2 dBs

Adjusting method:

1) Adjust with RV402 on the AU-24 board so that the audio output level becomes −10±0.2 dBs.

9-5-3. E-E Output Level Check

Mode	E-E
Signal	400 Hz, −10 dBs
Measurement Point	See Fig. 9-31
Measuring Instrument	Audio level meter
Specified Value	−10±2 dBs

Checking method:

1) Be sure the audio output level is −10±2 dBs.

9-5-4. Overall Level Characteristics Check

Mode	Self-recording and playback
Signal	400 Hz, −10 dBs
Measurement Point	See Fig. 9-31
Measuring Instrument	Audio level meter
Specified Value	−10±3 dBs

Checking method:

1) Record the signal.
2) Play back the recorded section.
3) Be sure the audio output level is −10±3 dBs.

9-5-5. Overall Frequency Characteristics Check

Mode	Self-recording and playback
Signal	Ⓐ 400 Hz, −20 dBs Ⓑ 30 Hz, −20 dBs Ⓒ 4 Hz, −20 dBs
Measurement Point	See Fig. 9-31
Measuring Instrument	Audio level meter
Specified Value	When the 400 Hz playback output level is specified as 0 dB, the playback output levels of 30 Hz and 14 kHz become both 0±3 dB.

Checking method:

1) Record the signals of Ⓐ to Ⓒ in sequence.
2) Play back the recorded section.
3) Be sure that when the 400 Hz playback output level is specified as 0 dB, the playback output levels of 30 Hz and 14 kHz become both 0±3 dB.

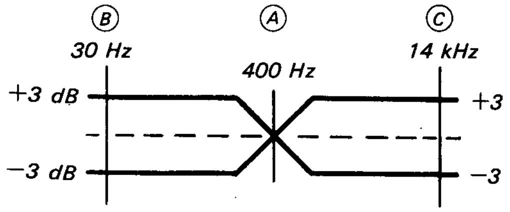


Fig. 9-32. AFM overall frequency characteristics

9-5-6. Overall Distortion Check

Mode	Self-recording and playback
Signal	400 Hz, −10 dBs
Measurement Point	See Fig. 9-31
Measuring Instrument	Distortion meter
Specified Value	Less than 0.5%*1

Checking method:

1) Record the signal.
2) Play back the recorded section.
3) Be sure the distortion is less than 0.5%*1.

*1: The value when a distortion measuring filter (Fig. 9-33) is used and that when the filter is not used is less than 1.0%.

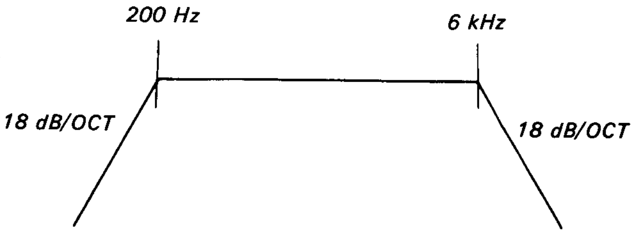


Fig. 9-33. Distortion measuring filter

9-5-7. Overall Noise Level Check

Mode	Self-recording and playback
Signal	Non-signal (Short-circuit Pin ㉒ (AUDIO IN) of multiconnector (SC-6 board) and Pin ⑳ (GND) with a jumper.)
Measurement Point	See Fig. 9-31
Measuring Instrument	Audio level meter
Specified Value	Less than −70 dBs*2

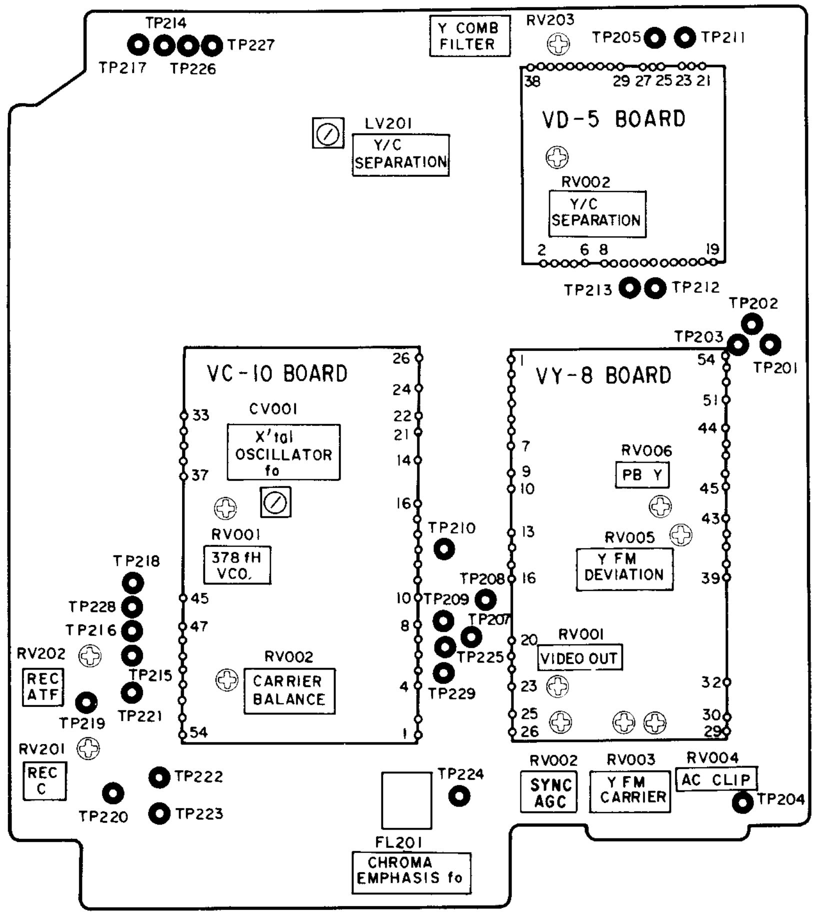
Checking method:

1) Record the signal.
2) Play back the recorded section.
3) Be sure the noise level is less than −70 dBs*2.

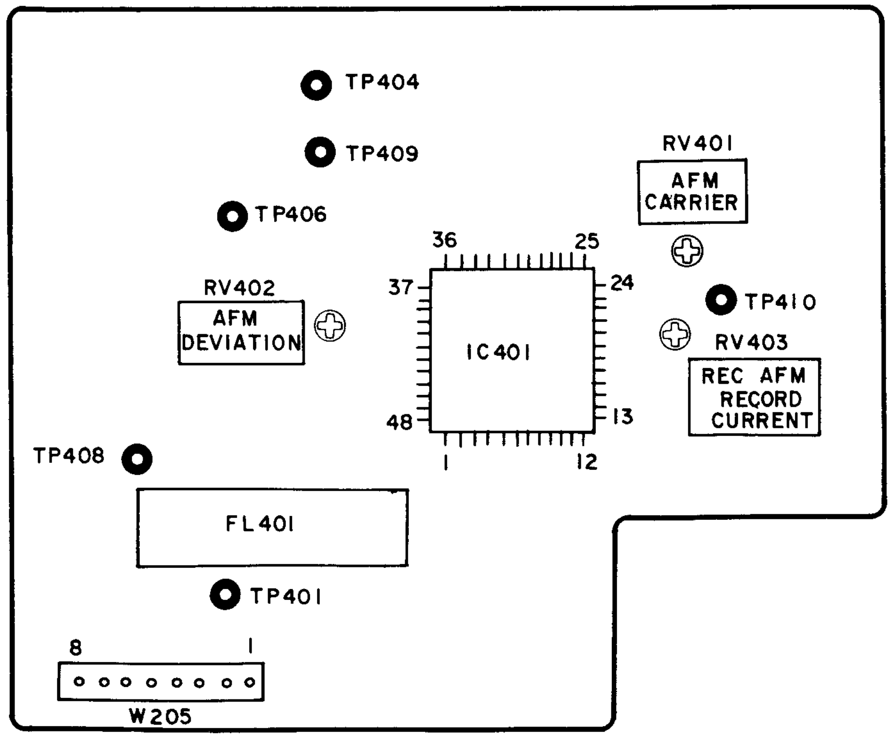
*2: The value when an IHF-A listening sensitivity correction filter is used.

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

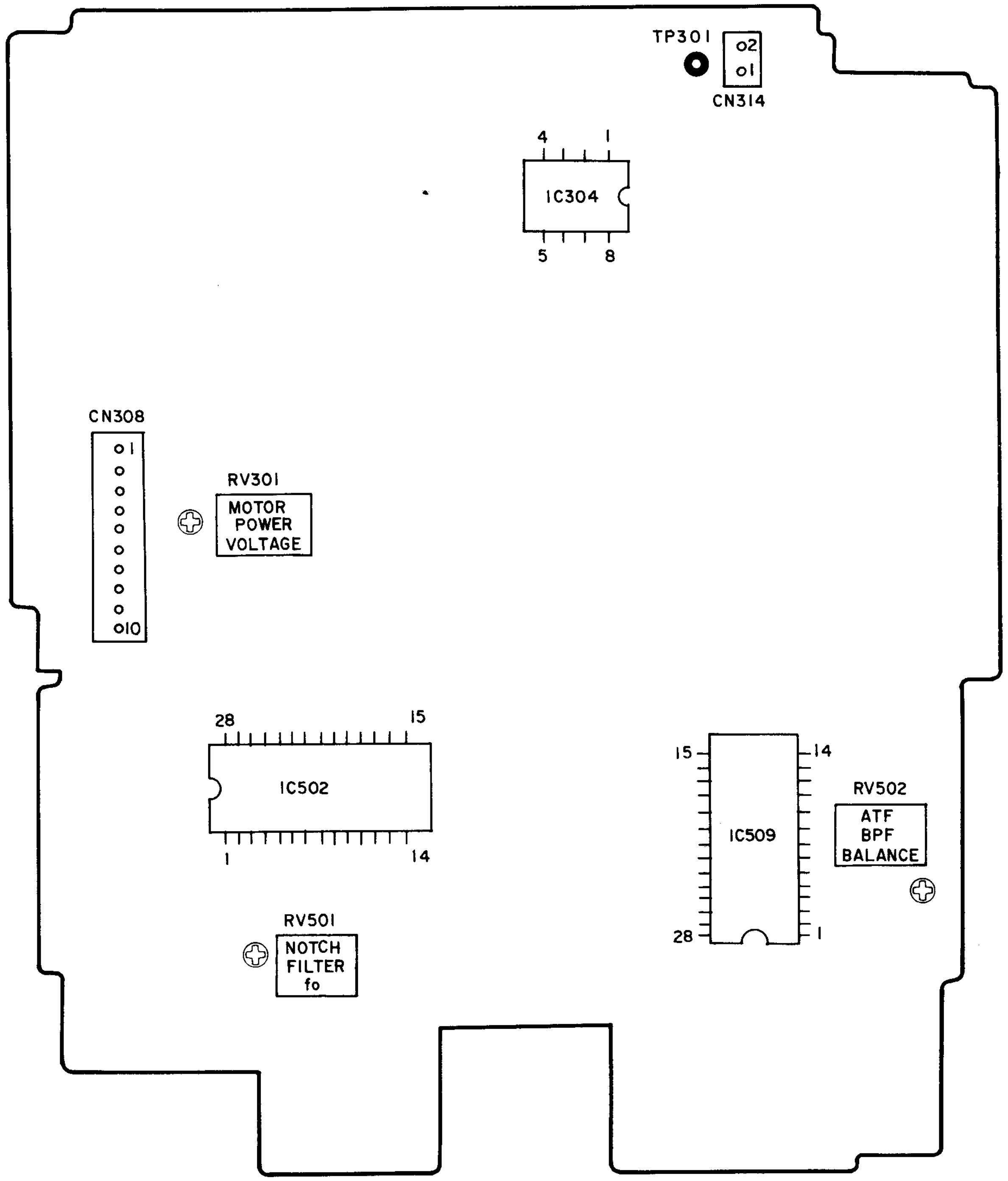
VI-21 BOARD (COMPONENT SIDE)


TP214
TP217
TP226
TP227
Y COMB FILTER
RV203
TP205
TP211
38
29 27 25 23 21
VD-5 BOARD
RV002
Y/C SEPARATION
2
6 8
19
LV201
Y/C SEPARATION
TP213
TP212
TP202
TP203
TP201
VC-10 BOARD
CV001
X'tal OSCILLATOR fo
RV001
378 fH VCO.
RV002
CARRIER BALANCE
33
37
45
47
54
26
24
22
21
14
16
10
8
4
1
TP210
TP208
TP209
TP207
TP225
TP229
VY-8 BOARD
RV006
PB Y
RV005
Y FM DEVIATION
RV001
VIDEO OUT
1
7
9
10
13
16
20
23
25
26
54
51
44
45
43
39
32
30
29
TP218
TP228
TP216
TP215
TP221
TP219
RV202
REC ATF
RV201
REC C
TP220
TP222
TP223
TP224
FL201
CHROMA EMPHASIS fo
RV002
SYNC AGC
RV003
Y FM CARRIER
RV004
AC CLIP
TP204

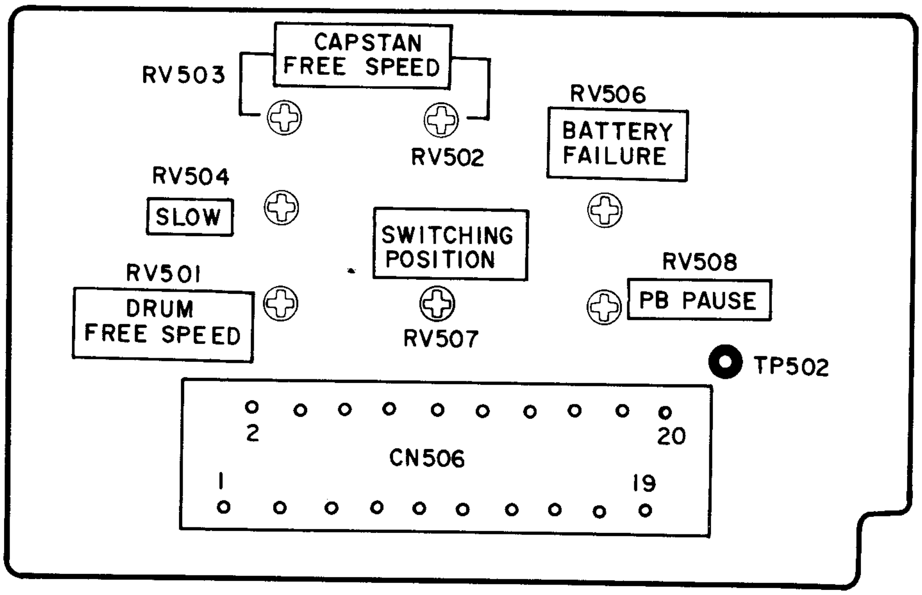
AU-24 BOARD (COMPONENT SIDE)


TP404
TP409
TP406
RV401
AFM CARRIER
RV402
AFM DEVIATION
36
25
37
24
IC401
48
13
1
12
TP410
RV403
REC AFM RECORD CURRENT
TP408
FL401
TP401
8
1
W205

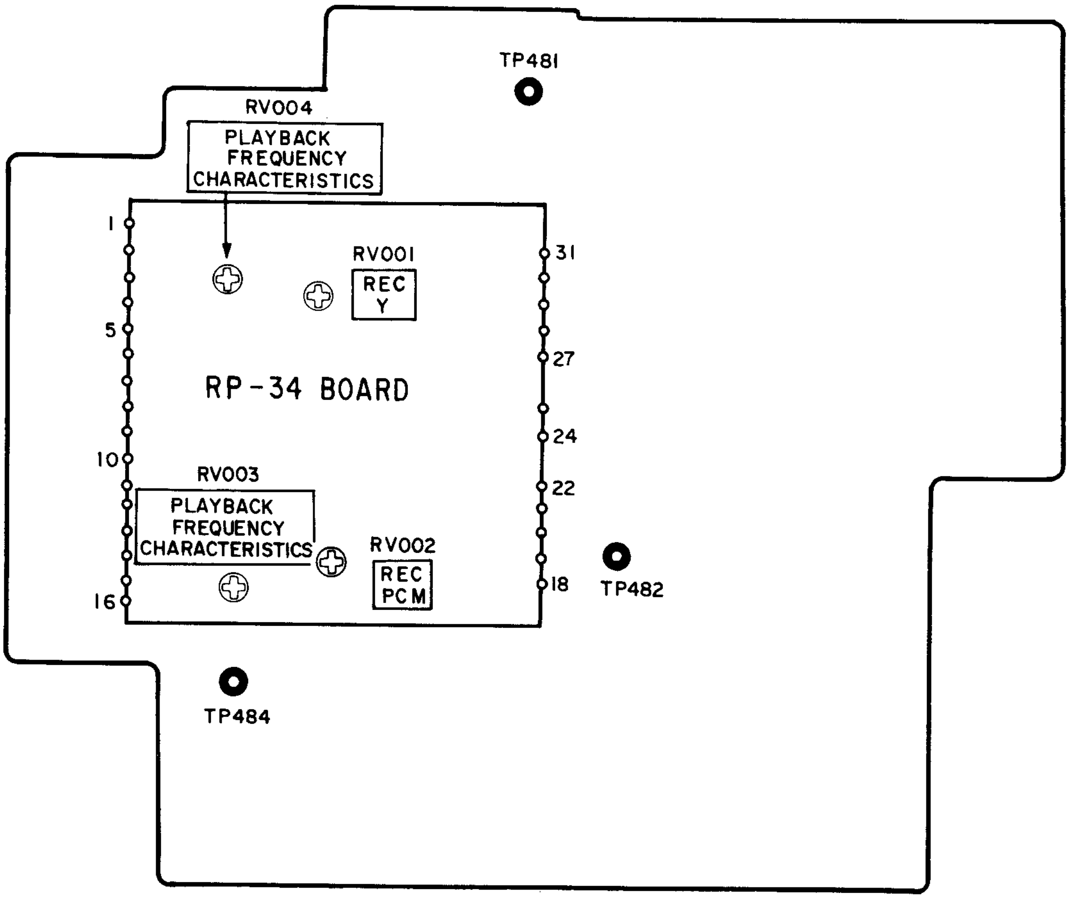
SS-64 BOARD (COMPONENT SIDE)


TP301
CN314
o2
o1
4
1
IC304
5
8
CN308
o1
o10
RV301
MOTOR POWER VOLTAGE
28
15
IC502
1
14
15
14
IC509
28
1
RV502
ATF BPF BALANCE
RV501
NOTCH FILTER fo

TS-55 BOARD (COMPONENT SIDE)


CAPSTAN FREE SPEED
RV503
RV502
RV506
BATTERY FAILURE
RV504
SLOW
SWITCHING POSITION
RV501
DRUM FREE SPEED
RV507
RV508
PB PAUSE
TP502
2
20
CN506
1
19

RP-39 BOARD (COMPONENT SIDE)


TP481
RV004
PLAYBACK FREQUENCY CHARACTERISTICS
1
5
10
16
RV001
REC Y
31
27
24
22
18
RP-34 BOARD
RV003
PLAYBACK FREQUENCY CHARACTERISTICS
RV002
REC PCM
TP482
TP484

CCD-V110

SONY
SERVICE MANUAL

US Model
Canadian Model
Janualy, 1987

SUPPLEMENT-1

Subject: Camera auto focus system adjustment

- **File this supplement with the service manual.**

CORRECTION

- **Please correct your service manual.**
- **Please note a revision has been made on color reproduction standards.**

MICROFILM

VIDEO

1. AUTO FOCUS SYSTEM ADJUSTMENT

Place the Sign Chart 2m (or 1m) away from the lens base plane as shown in Fig. 1-1 and perform adjustment. Set lighting brightness to such a value (120 lux) that the "LOW LIGHT" indication is displayed within EVF.

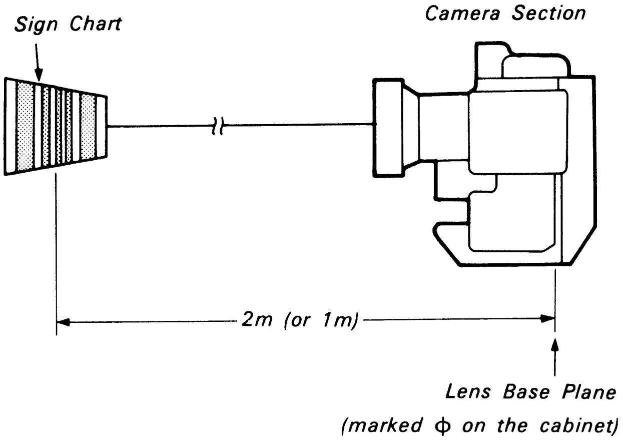

Sign Chart
Camera Section
2m (or 1m)
Lens Base Plane
(marked ф on the cabinet)

Fig. 1-1.

1-1. AD CONVERTER REFERENCE VOLTAGE ADJUSTMENT (AF-23 BOARD)

Object	Arbitrary
Measurement Point	Both terminals of RV802 (See Fig. 1-2)
Measuring Instrument	Digital voltmeter
Adjusting Element	RV802
Specified Value	2.04±0.05Vdc

Adjusting method:

1) Set the FOCUS switch (S671 on CG-1 board) to AUTO position.
2) Adjust to 2.04±0.05Vdc with RV802.

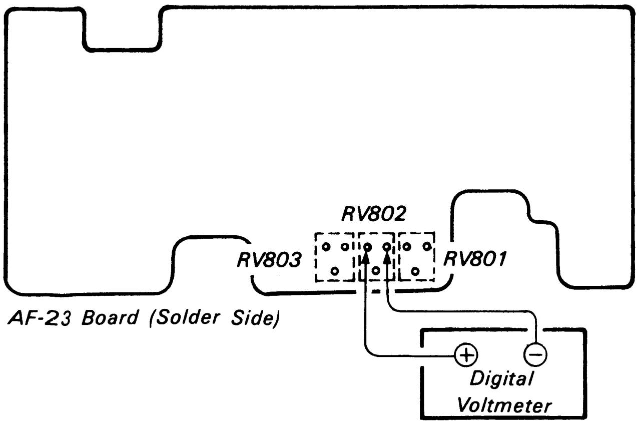

RV802
RV803
RV801
AF-23 Board (Solder Side)
+
−
Digital Voltmeter

Fig. 1-2.

1-2. $\overline{X}_p$ ADJUSTMENT (AF-23 board)

Object	Sign Chart (2.0m in front of lens base plane (ф mark))
Measurement Point	CH1: Pin ⑪ of IC802 CH2: Pin ⑭ of IC802 See Fig. 1-3
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV801
Specified Value	Pulse should be output alternately from CH1 and CH2

Connection:

1) Oscilloscope

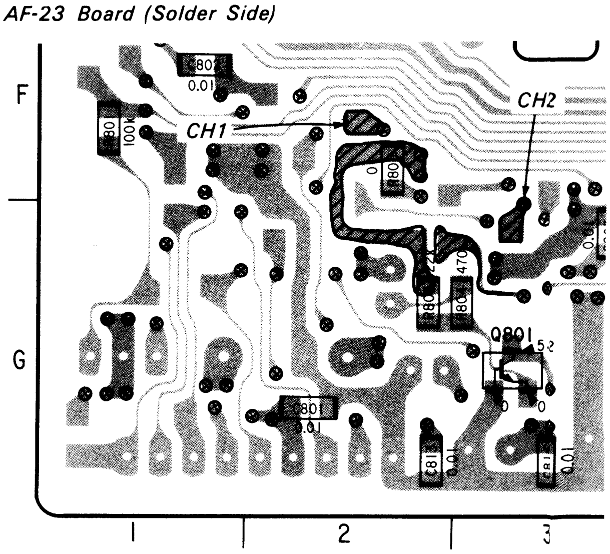

AF-23 Board (Solder Side)
F
G
CH1
CH2
Q801
1
2
3

Fig. 1-3.

2) Remove CG-1 board in Fig. 1-4 fixing screw and three claws, then pull CG-1 board down.
   Contact Pin ㊶ of IC802 to GND (at the spot specified in Fig. 1-5) and set to ALIGNMENT mode.

Note: If the FOCUS switch is set to manual after adjustment, it returns to original state.

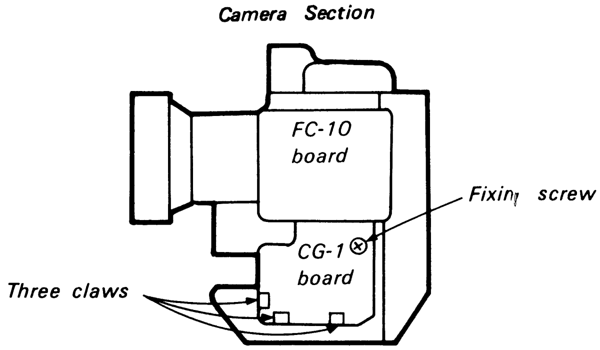

Camera Section
FC-10 board
Fixing screw
CG-1 board
Three claws

Fig. 1-4.

AF-23 Board (Component Side)

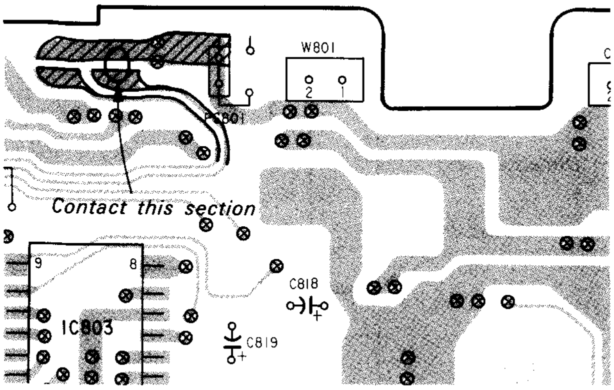

W801
2
1
Contact this section
9
8
IC803
C818
C819

Fig. 1-5.

Setting of switches:

1. FOCUS switch (S671 of CG-1 board)..... AUTO
2. Zoom lever..... 40 mm (approx.)

Adjusting method:

1) Turn the focus ring and set focus index to the center of "2".
2) Adjust with RV801 so that pulses are output alternately from CH1 and CH2.

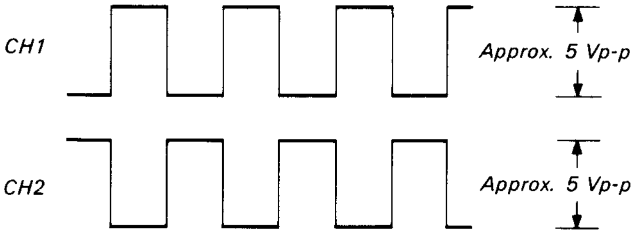

CH1
Approx. 5 Vp-p
CH2
Approx. 5 Vp-p

Fig. 1-6.

1-3. Z-AXIS ADJUSTMENT

Object	Sign Chart (2.0m in front of lens base plane (ф mark))
Specified Value	TELE side: ±1mm WIDE side: $^{+10}_{-7}$ mm

Adjusting method:

1) Set the FOCUS switch (S671 on CG-1 board) to AUTO position.
2) Set the zoom lever to TELE end position (72 mm).
3) Loosen Z-frame fixing screws ❶ (Fig. 1-8).
4) Remove the adhesive.
5) Move the Z-frame to and fro (A↔B direction) until the focus ring stops at the center of index "2" (Fig. 1-7, 8).
6) Tighten Z-frame fixing screws ❶ (Fig. 1-8).
7) Set the zoom lever to the WIDE end position (12 mm).
8) Turn focus ring to the 1.3m position and release the hand from it.
9) Confirm that focus ring stop position (index position) is within $^{+10}_{-7}$ mm from the center of "2" (Fig. 1-7).
10) Turn the focus ring to ∞ position and release the hand from it.
11) Confirm that focus ring stop position is within the above range.
12) If the above standards are not satisfied, repeat steps 2) to 11).

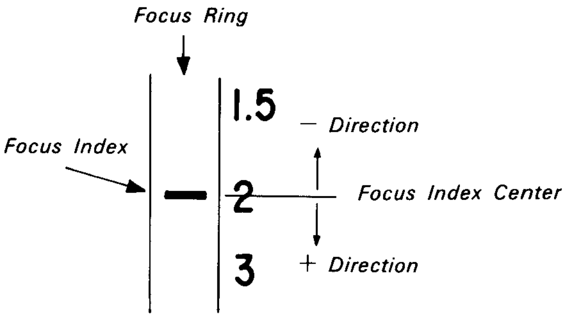

Focus Ring
Focus Index
1.5
2
3
− Direction
Focus Index Center
+ Direction

Fig. 1-7.

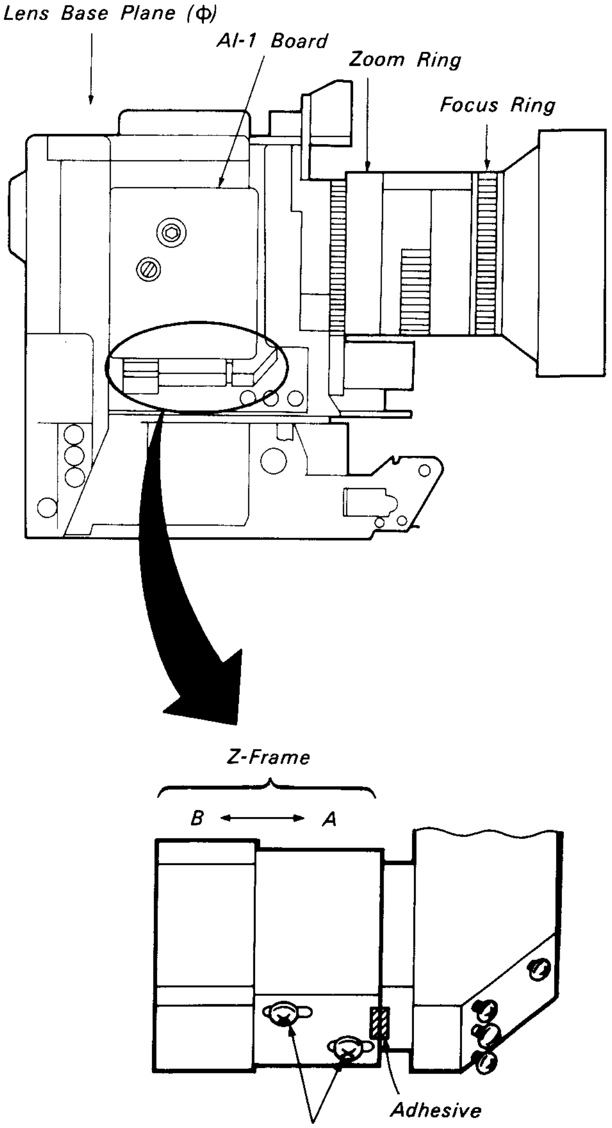

Lens Base Plane (ф)
AI-1 Board
Zoom Ring
Focus Ring
Z-Frame
B
A
Adhesive
❶ Z-Frame Fixing Screws

Fig. 1-8.

1-4. MOTOR VOLTAGE ADJUSTMENT (AF-23 BOARD)

Object	Sign Chart (1.0m in front of lens base plane (ϕ mark).)
Measuring Instrument	Stopwatch
Adjusting Element	RV803
Specified Value	2.5±0.5 sec

Setting of switches:

1. FOCUS switch (S671 on CG-1 board)..... AUTO
2. Zoom lever..... 20 mm (approx.)

Adjusting method:

1) Set focus ring to infinity position (∞).
2) Measure time from the moment you release the focus ring until it turns back to the short-distance end position (1.3m).
3) If the above standards are not satisfied, repeat steps 1) and 2) after turning RV803.

1-5. AUTO FOCUS CHECK

Object	Sign Chart (2.0m in front of lens base plane (ϕ mark)
Specified Value	TELE side: Within ±1.0 mm against exact (manual) focus setting WIDE side: Within $^{+20}_{-10}$ mm against exact (manual) focus setting

Adjusting method:

1) Set the FOCUS switch (S671 on CG-1 board) to MANUAL position.
2) Set the zoom lever to TELE end position (72 mm).
3) Adjust focus by turning the focus ring. Confirm that the focus index position is within the range shown in Fig. 1-9. Also, memorize the focus index position (If this condition cannot be attained, perform flange-back adjustment).

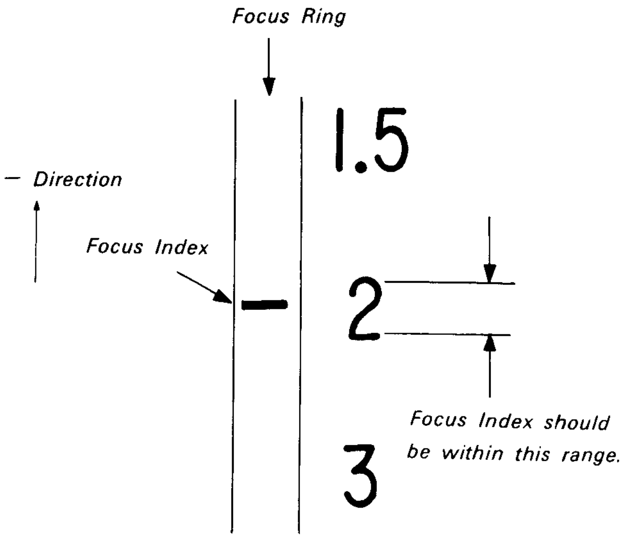


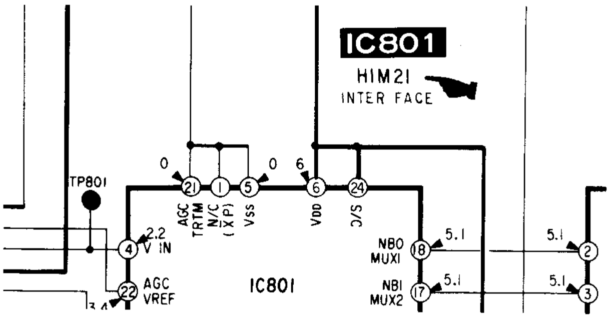
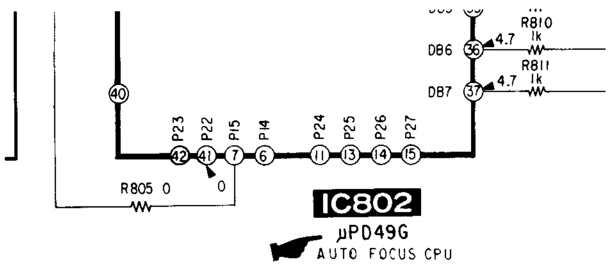
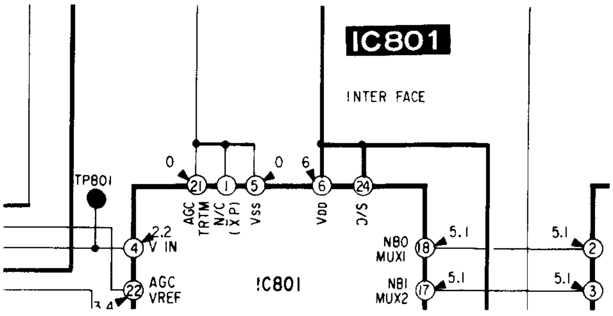
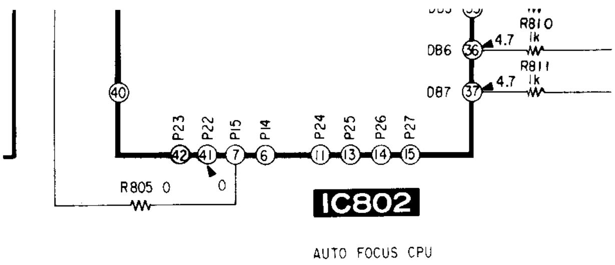
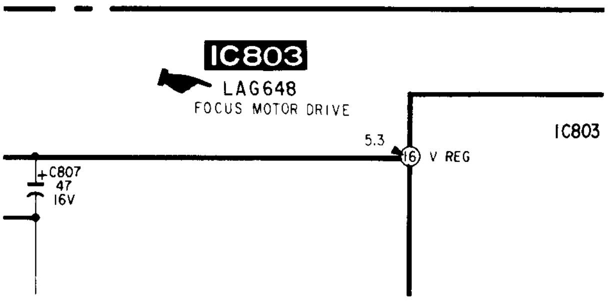
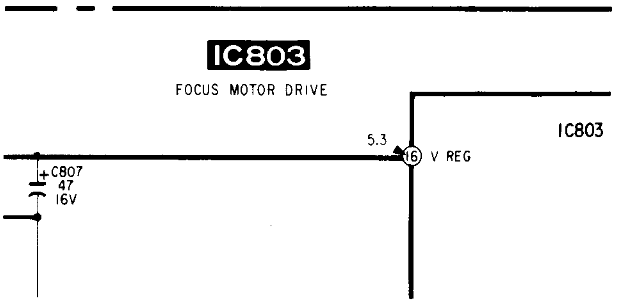
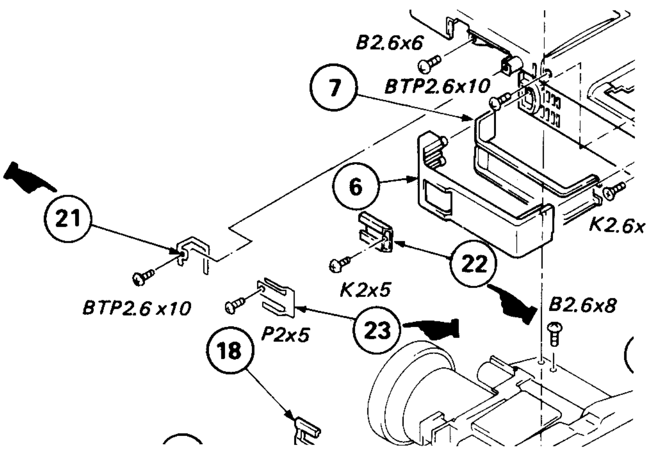
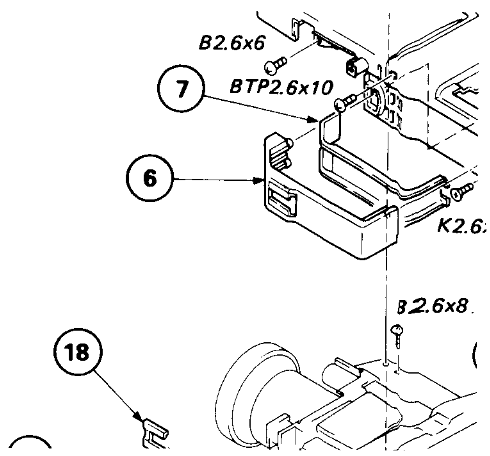
Fig. 1-9.

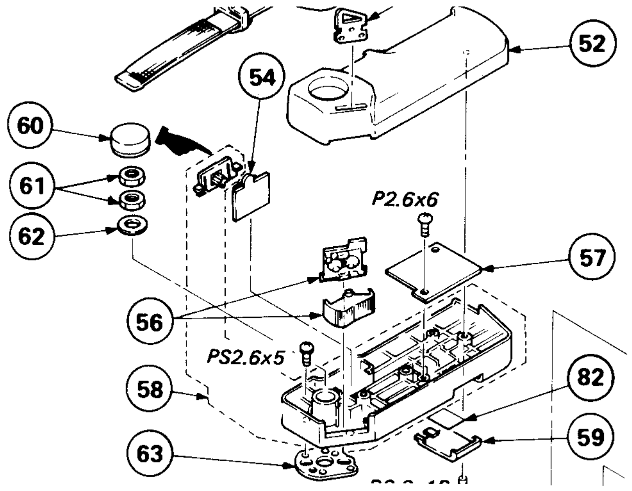
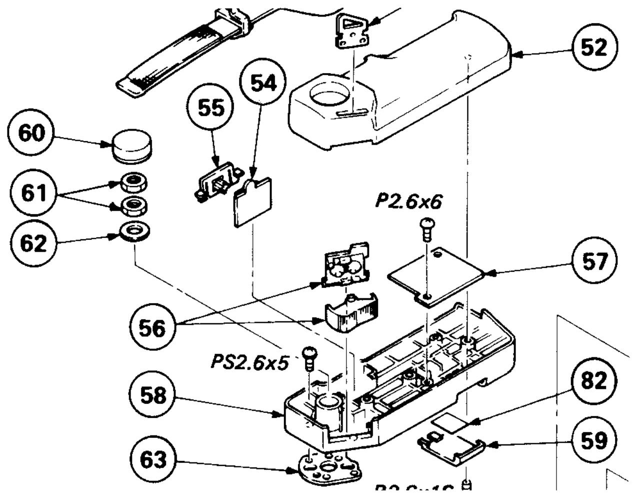
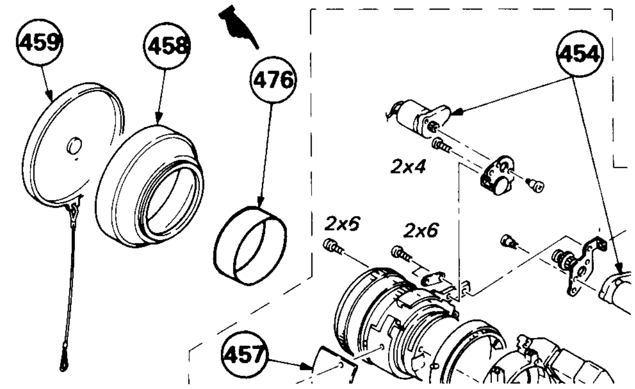
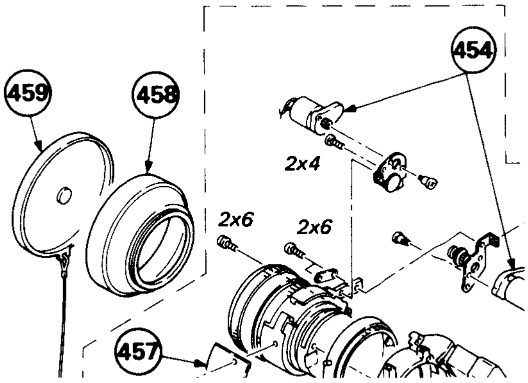
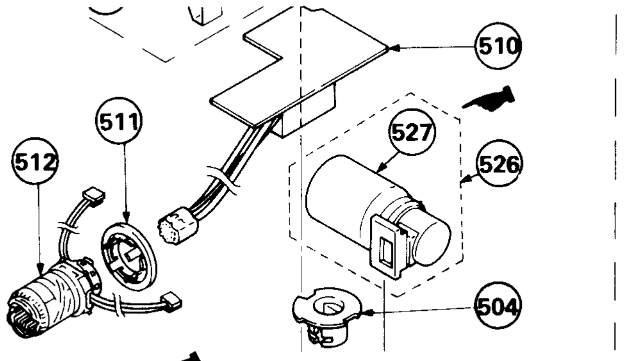
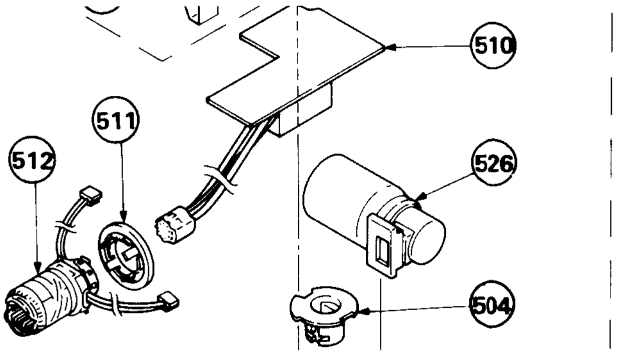
4) Set the FOCUS switch to AUTO position.
5) Turn the focus ring to ∞ position and release the hand from it.
6) Confirm that the focus ring stops within ±1.0 mm against the manual focus position (i.e. the focus index position memorized in step 3)).
7) Turn the focus ring to the 1.3m position and release the hand from it.
8) Confirm that the focus ring stops within ±1.0 mm against the manual focus position.
9) Fix the zoom lever at the WIDE end position (12 mm).
10) Repeat steps 5) to 7). Confirm that the focus standards at the WIDE end position is $^{+20}_{-10}$ mm against the manual focus position (i.e. the focus index position memorized in step 3)).

CORRECTION

☛ : corrected portion

Page			
81	Correct	14	It is the "H" state when the HMS/$\overline{\text{REEL}}$ switch (S309 on SK-12 board) is set to the HMS side.
		15	It is the SP mode when the SP/LP test pin (TP302 on SK-12 board) is opened, and it is the LP mode when the SP/LP test pin is grounded (When tested in the test mode).
	Incorrect	14	"H" when the SP/HMS-LP/REEL switch (S309 on SK-12 board) is positioned at the SP/HMS side.
		15	"H" when the SP/HMS-LP/REEL switch (S309 on SK-12 board) is positioned at the SP/HMS side.
82	Correct	60	An input for the tape counter. "H" when the capstan is rotating in FWD direction.
	Incorrect	60	An input for the tape counter. "H" when the capstan is rotating in normal direction.
83	Correct		*9 By means of the SP/LP test pin (TP302 on SK-12 board. When tested in the test mode).
	Incorrect		*9 Dependent upon SP/LP selector (S309 on SK-12 board).
84	Correct		*11 By means of the SP/LP test pin (TP302 on SK-12 board. When tested in the test mode).
	Incorrect		*11 Dependent upon SP/LP selector (S309 on SK-12 board).
89	Correct	5 9	System clock oscillator terminal (Continuous oscillation when S/S 5V is ON. Oscillation frequency: approx. 330 kHz). When operated the lithium battery, intermittent oscillations at a frequency of approx. 70 kHz take place at intervals of 0.5 sec.
	Incorrect	5 9	System clock oscillating pin (Oscillates only when S/S 5V is at ON. Oscillating frequency: Approx. 330kHz)
90	Correct	21	Strobe signal for EVF character generator (IC676 on CG-1 board) ("H" pulse output of 4V cycle)
	Incorrect	21	Strobe signal for EVF character generator (IC676 on CG-1 board) (Almost "H" pulse output of V cycle)

Page	Correct	Incorrect
143	 IC801 H1M21 INTER FACE TP801 AGC TRTM N/C (XP) VSS VDD D/S V IN AGC VREF IC801 NB0 MUX1 NB1 MUX2 5.1 2.2  R810 1k R811 1k DB6 DB7 4.7 P23 P22 P15 P14 P24 P25 P26 P27 R805 0 IC802 µPD49G AUTO FOCUS CPU	 IC801 INTER FACE TP801 AGC TRTM N/C (XP) VSS VDD D/S V IN AGC VREF IC801 NB0 MUX1 NB1 MUX2 5.1 2.2  R810 1k R811 1k DB6 DB7 4.7 P23 P22 P15 P14 P24 P25 P26 P27 R805 0 IC802 AUTO FOCUS CPU
144	 IC803 LAG648 FOCUS MOTOR DRIVE IC803 5.3 V REG C807 47 16V	 IC803 FOCUS MOTOR DRIVE IC803 5.3 V REG C807 47 16V
215	 B2.6x6 7 BTP2.6x10 6 K2.6x 21 22 K2x5 BTP2.6 x10 B2.6x8 23 P2x5 18 15 3-713-539-01 KNOB, EJECT 17 3-713-540-01 KNOB, REC 21 *3-713-543-01 PLATE (L), CONNECTION 22 3-688-985-01 SHOE, ACCESSORY 23 3-688-940-01 SPRING, LEAF	 B2.6x6 7 BTP2.6x10 6 K2.6 B2.6x8 18 15 3-713-578-01 KNOB, EJECT 17 3-713-577-01 KNOB, REC

Page	Correct	Incorrect
216	 52 54 60 61 62 P2.6x6 57 56 PS2.6x5 82 58 59 63 58 X-3686-904-1 GRIP (1) SUB ASSY	 52 55 54 60 61 62 P2.6x6 57 56 PS2.6x5 82 58 59 63 55 3-712-599-01 BUTTON, SS 58 3-712-603-01 GRIP (1)
224	 459 458 476 454 2x4 2x6 2x6 457 455 3-707-289-01 IRIS UNIT 456 3-707-290-01 RING ASSY, ZOOM 457 3-707-288-01 RING, ORNAMENTAL 476 A-7002-184-A RING ASSY, HOOD	 454 459 458 2x4 2x6 2x6 457 455 IRIS UNIT 456 ZOOM RING UNIT 457 PLATE, SCALE
225	 510 511 527 512 526 504 524 3-696-016-11 EYE CUP 526 8-814-225-90 MICROPHONE C-2012 527 X-2536-705-1 SCREEN ASSY, WINDOW 527	 510 511 512 526 504 524 3-686-861-01 CAP, EYE 526 8-814-225-90 MICROPHONE C-2012

<table>
<tr><th>Page</th><th>Correct</th><th>Incorrect</th></tr>
<tr><td>232</td><td>*A-7050-434-A SC-6 BOARD, COMPLETE
*********************</td><td>1-620-152-11 SC-6 BOARD
***********</td></tr>
<tr><td>249</td><td>*A-7060-604-A AF-23 BOARD, COMPLETE
****
IC
IC801 ——— IC HIM21
IC802 9-990-856-01 IC UPD49G
IC803 9-990-855-01 IC LAG648
• IC801 is unreplaceable. If it is defective, replace AF-23 board with a new one to which IC801 has been mounted.
• IC861 (CCD forcus sensor) which has been connected to CN807 on AF-23 board is unreplaceable. If it is defective, replace zoom lens with a new one.</td><td>*A-7060-604-A AF-23 BOARD, COMPLETE
****
IC
IC801
IC802
IC803</td></tr>
<tr><td>252</td><td>ACCESSORIES AND PACKING MATERIALS
****
*3-701-625-01 BAG, POLYETHYLENE
3-765-608-21 MANUAL, INSTRUCTION
*3-696-079-01 BAG, PROTECTION
3-712-595-11 BELT, SHOULDER
*3-712-596-01 CUSHION (UPPER)
*3-712-597-01 CUSHION (LOWER)
~~*3-712-635-01 INDIVIDUAL CARTON~~
3-714-016-01 PAT, SHOULDER</td><td>ACCESSORIES AND PACKING MATERIALS
****
3-765-608-21 MANUAL, INSTRUCTION
*3-696-079-01 BAG, PROTECTION
3-712-595-11 BELT, SHOULDER
*3-712-596-01 CUSHION (UPPER)
*3-712-597-01 CUSHION (LOWER)
*3-712-635-01 INDIVIDUAL CARTON</td></tr>
<tr><td>258</td><td>7-4-5. IRIS Setting Adjustment (AT-5, ME-4 Boards)
<table>
<tr><td>Object</td><td>Color bar chart standard picture frame</td></tr>
<tr><td>Filters</td><td>ND filters: 0.4 and 0.1</td></tr>
<tr><td>Measurement Point</td><td>TP701 (CCD OUT) on ME-4 board</td></tr>
<tr><td>Measuring Instrument</td><td>Oscilloscope</td></tr>
<tr><td>Adjusting Element</td><td>RV885 (IRIS SET) on AT-5 board</td></tr>
<tr><td>Specified Value</td><td>200±5 mV</td></tr>
</table>
Adjusting method:
1) By turning RV855 on AT-5 board, adjust for a 200±5 mV signal level with no ND filter mounted on. (See Fig. 7-11) (Be sure to conclude this adjustment by turning RV855 in a direction to lower the signal level.)
2) Mount ND filters of 0.5 (0.4+0.1) on in front of lens, and check to assure a smooth variation of the signal level.
3) Remove the ND filters, and check to assure the signal level is 200±5 mV.
4) If the above specification fails to meet, repeat steps 1) to 3).</td><td>7-4-5. IRIS Setting Adjustment (AT-5, ME-4 Boards)
<table>
<tr><td>Object</td><td>Color bar chart standard picture frame</td></tr>
<tr><td>Filters</td><td>ND filters: 0.4 and 0.1</td></tr>
<tr><td>Measurement Point</td><td>TP701 (CCD OUT) on ME-4 board</td></tr>
<tr><td>Measuring Instrument</td><td>Oscilloscope</td></tr>
<tr><td>Adjusting Element</td><td>RV885 (IRIS SET) on AT-5 board</td></tr>
<tr><td>Specified Value</td><td>250±5 mV</td></tr>
</table>
Adjusting method:
1) By turning RV855 on AT-5 board, adjust for a 250±5 mV signal level with no ND filter mounted on. (See Fig. 7-11) (Be sure to conclude this adjustment by turning RV855 in a direction to lower the signal level.)
2) Mount ND filters of 0.5 (0.4+0.1) on in front of lens, and check to assure a smooth variation of the signal level.
3) Remove the ND filters, and check to assure the signal level is 250±5 mV.
4) If the above specification fails to meet, repeat steps 1) to 3).</td></tr>
</table>

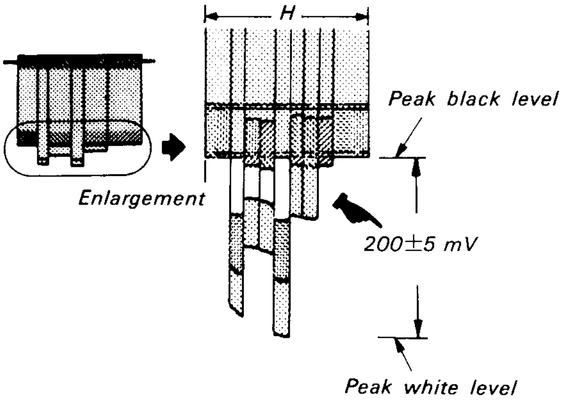
<table>
<tr><th>Page</th><th>Correct</th><th>Incorrect</th></tr>
<tr><td>258</td><td>


Fig. 7-11.
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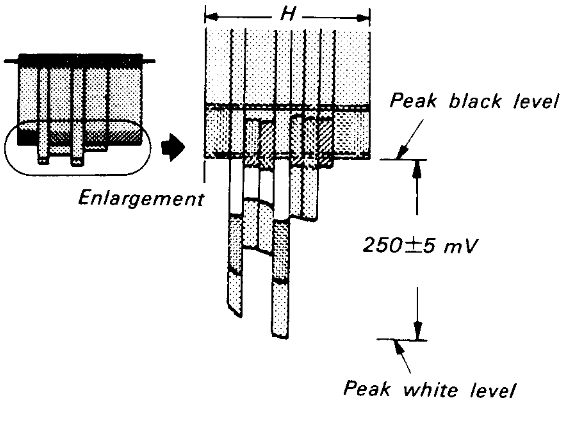

Fig. 7-11.
</td></tr>
<tr><td>268</td><td>
7-4-28. Indoor White Balance Adjustment (2) (ME-4 Board)
<table>
<tr><td>Object</td><td>Color bar standard picture frame</td></tr>
<tr><td>Measurement Point</td><td>CH1 (X): TP715 (B-Y)
CH2 (Y): TP714 (R-Y)</td></tr>
<tr><td>Measuring Instrument</td><td>Oscilloscope (X-Y mode)</td></tr>
<tr><td>Adjusting Element</td><td>RV710 (INDOOR R)
RV711 (INDOOR B)</td></tr>
<tr><td>Specified Value</td><td>The white and black luminance spots should coincide with each other in location.</td></tr>
</table>
</td><td>
7-4-28. Indoor White Balance Adjustment (2) (ME-4 Board)
<table>
<tr><td>Object</td><td>Color bar standard picture frame</td></tr>
<tr><td>Measurement Point</td><td>CH1 (X): TP714 (R-Y)
CH2 (Y): TP715 (B-Y)</td></tr>
<tr><td>Measuring Instrument</td><td>Oscilloscope (X-Y mode)</td></tr>
<tr><td>Adjusting Element</td><td>RV710 (INDOOR R)
RV711 (INDOOR B)</td></tr>
<tr><td>Specified Value</td><td>The white and black luminance spots should coincide with each other in location.</td></tr>
</table>
</td></tr>
<tr><td>272</td><td>
7-5-1. Character Generator Clock Frequency Adjustment (CG-1, FC-10 Boards)
<table>
<tr><td>Mode</td><td>Standby</td></tr>
<tr><td>Object</td><td>Arbitrary</td></tr>
<tr><td>Measurement Point</td><td>Pin ③ of CN672 on CG-1 board</td></tr>
<tr><td>Measuring Instrument</td><td>Oscilloscope</td></tr>
<tr><td>Adjusting Element</td><td>CT671 on CG-1 board</td></tr>
<tr><td>Specified Value</td><td>38.0±0.5 μsec</td></tr>
</table>

Adjusting method:
1) Switch CAMERA POWER (S674 on CG-1 board) on, and engage a standby mode.
2) Check to assure the display either on a monitor TV or the EVF screen of the characters such as shown in Fig. 7-46.
3) By operating CT671, adjust for a 38.0±0.5 μsec cycle time. (See Fig. 7-47)
</td><td>
7-5-1. Character Generator Clock Frequency Adjustment (CG-1, FC-10 Boards)
<table>
<tr><td>Mode</td><td>Standby</td></tr>
<tr><td>Object</td><td>Arbitrary</td></tr>
<tr><td>Measurement Point</td><td>Pin ③ of CN672 on CG-1 board</td></tr>
<tr><td>Measuring Instrument</td><td>Oscilloscope</td></tr>
<tr><td>Adjusting Element</td><td>CT671 on CG-1 board</td></tr>
<tr><td>Specified Value</td><td>39.0±0.5 μsec</td></tr>
</table>

Adjusting method:
1) Switch CAMERA POWER (S674 on CG-1 board) on, and engage a standby mode.
2) Check to assure the display either on a monitor TV or the EVF screen of the characters such as shown in Fig. 7-46.
3) By operating CT671, adjust for a 39.0±0.5 μsec cycle time. (See Fig. 7-47)
</td></tr>
</table>

<table>
<tr><th>Page</th><th>Correct</th><th>Incorrect</th></tr>
<tr><td>272</td><td>

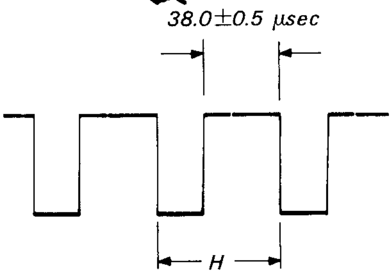

Fig. 7-47.

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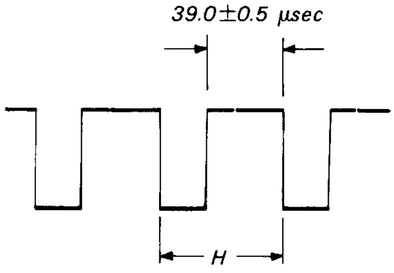


Fig. 7-47.

</td></tr>
<tr><td>273</td><td>

7-5-3. Wiper Adjustment (FC-10 Board)

<table>
<tr><td>Mode</td><td>Standby</td></tr>
<tr><td>Object</td><td>Arbitrary</td></tr>
<tr><td colspan="2">V_T Adjustment</td></tr>
<tr><td>Measurement Point</td><td>Pin ⑭ of IC605</td></tr>
<tr><td>Measuring Instrument</td><td>Oscilloscope</td></tr>
<tr><td>Adjusting Element</td><td>RV601</td></tr>
<tr><td>Specified Value</td><td>3±0.05 Vp-p</td></tr>
<tr><td colspan="2">Wiper Window Height Adjustment</td></tr>
<tr><td>Measurement Point</td><td>Pin ⑭ of IC604</td></tr>
<tr><td>Measuring Instrument</td><td>Oscilloscope (sweep, V-range)</td></tr>
<tr><td>Adjusting Element</td><td>Voltage VR of stabilized power supply</td></tr>
<tr><td>Specified Value</td><td>2±0.1m sec</td></tr>
<tr><td colspan="2">Wiper Window Width Adjustment</td></tr>
<tr><td>Measurement Point</td><td>Pin ⑭ of IC604</td></tr>
<tr><td>Measuring Instrument</td><td>Oscilloscope (sweep, H-range)</td></tr>
<tr><td>Adjusting Element</td><td>RV602</td></tr>
<tr><td>Specified Value</td><td>6.0±0.5 μsec</td></tr>
</table>

Connection:

1) Connect stabilized power supply to Pin ① of W603 on FC-10 board. (A. FADER)

Adjusting method:

1) Adjust Pin ⑭ of IC605 waveform height to 3±0.05 Vp-p with RV601 (See Fig. 7-49 (a)).
2) Set width of the pulse generated at Pin ⑭ of IC604 to 2±0.1msec by adjusting DC stabilized power supply voltage (See Fig. 7-49 (b)).
3) Set width of the pulse generated at Pin ⑭ of IC604 to 6.0±0.5 μsec by adjusting RV602 (See Fig. 7-49 (c)).

</td><td>

7-5-3. Wiper Adjustment (FC-10 Board)

<table>
<tr><td>Mode</td><td>Standby</td></tr>
<tr><td>Object</td><td>Arbitrary</td></tr>
<tr><td colspan="2">H_T adjustment</td></tr>
<tr><td>Measurement Point</td><td>Pin ⑭ of IC604</td></tr>
<tr><td>Measuring Instrument</td><td>Oscilloscope</td></tr>
<tr><td>Adjusting Element</td><td>RV602</td></tr>
<tr><td>Specified Value</td><td>1.5±0.1 μsec</td></tr>
<tr><td colspan="2">V_T adjustment</td></tr>
<tr><td>Measurement Point
Measuring Instrument</td><td>}Run checks on the monitor TV screen.</td></tr>
<tr><td>Adjusting Element</td><td>RV601</td></tr>
<tr><td>Specified Value</td><td>The wiper window height and width should be equal to each other.</td></tr>
</table>

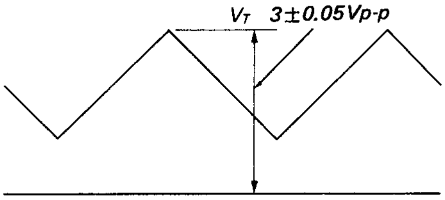
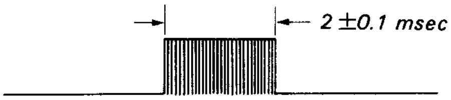
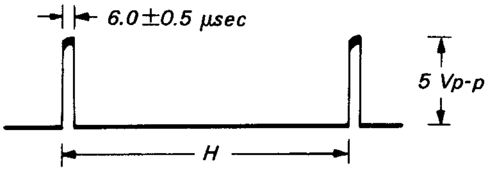
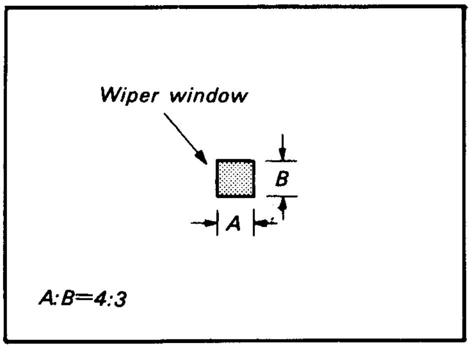
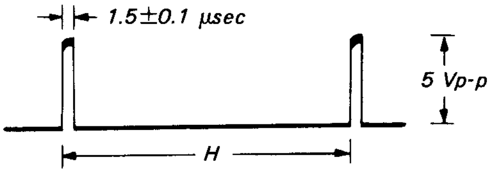
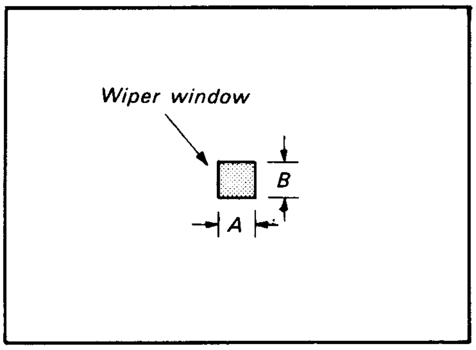
Connection:

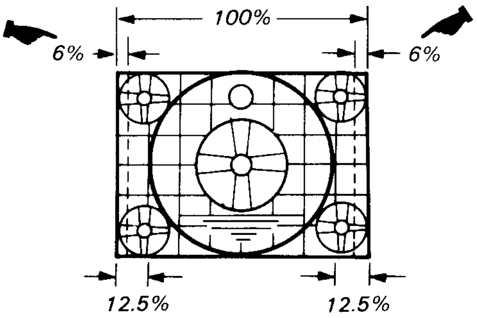
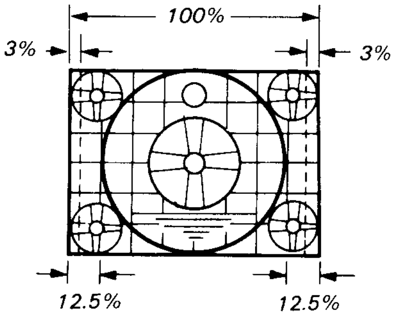
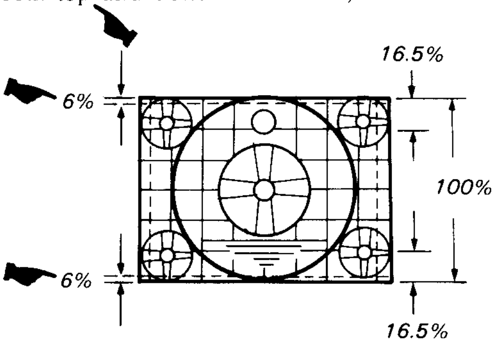
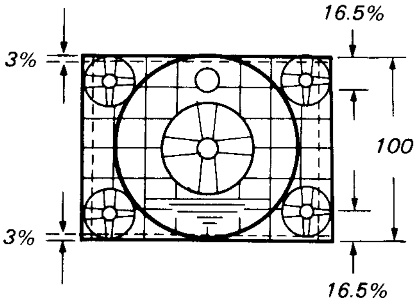
1) Supply Pin ① of W603 (A.FADER) on FC-10 board with the 3.00± 0.05Vdc DC voltage from a regulated DC power supply.
2) Connect TP603 (Pin ⑲ of IC601: $\overline{\text{TEST}}$) to GND with a jumper wire.

Adjusting method:

1) By turning RV602, adjust the width of H_T pulses generated at Pin ⑭ of IC604 to 1.5±0.1 μsec.

</td></tr>
</table>

Page	Correct	Incorrect
273	 Fig. 7-49 (a)  Fig. 7-49 (b)  6.0±0.5 μsec 5 Vp-p H Fig. 7-49 (c) Confirmation: 1) Horizontal/vertical ratio of monitor TV screen wiper window should be approx. 4 : 3 (See Fig. 7-50).  Wiper window B A A:B=4:3 Monitor TV screen Fig. 7-50.	 1.5±0.1 μsec 5 Vp-p H Fig. 7-49. 2) By turning RV601, equalize the height and width of the wiper window displayed on the monitor TV screen. *Equalize B to A by turning RV601.*  Wiper window B A Monitor TV screen Fig. 7-50.

Page	Correct	Incorrect
275	**7-6-4. Horizontal Amplitude Adjustment (VF-7 Board)** Adjusting method: 1) By turning RV704, focus the image. 2) By turning RV701, align upper and lower edges of the monoscope image with those of the screen. 3) By turning RV705, attain a normal brightness level. 4) To achieve 6±3% horizontal overscans (In both right and left directions), short-circuit or open the patterns (A and B) for H size adjusting capacitors (C718 and C719), one at a time until the overscan level is achieved. (See Fig. 7-56) Fig. 7-56)  Fig. 7-55.	**7-6-4. Horizontal Amplitude Adjustment (VF-7 Board)** Adjusting method: 1) By turning RV704, focus the image. 2) By turning RV701, align upper and lower edges of the monoscope image with those of the screen. 3) By turning RV705, attain a normal brightness level. 4) To achieve 6±3% horizontal overscans (the right and left overscans put together), short-circuit or open the patterns (A and B) for H size adjusting capacitors (C718 and C719), one at a time until the overscan level is achieved. (See Fig. 7-56)  Fig. 7-55.
	7-6-5. Vertical Amplitude Adjustment (VF-7 Board) Adjusting method: 1) By turning RV701, adjust for 6±3% vertical overscans (In both top and bottom directions).  Fig. 7-57.	**7-6-5. Vertical Amplitude Adjustment (VF-7 Board)** Adjusting method: 1) By turning RV701, adjust for 6±3% vertical overscans (the top and bottom overscans put together).  Fig. 7-57.

Page	Correct	Incorrect
275	**7-6-6. Brightnes, Contrast Adjustments (VF-7 Board)** Adjusting method: 1) By turning RV705 and RV703 alternately, adjust for the valid display of light and dark areas of a gray scale. (The light area should not be made light enough for a fuzzy display of cross-hatches within the monoscopic circle, be sure to maintain the brightness of the dark area in a degree in which discrimination between the darkest area and second darkest area can scarecely be made.)	**7-6-6. Brightnes, Contrast Adjustments (VF-7 Board)** Adjusting method: 1) By turning RV705 and RV703 alternately, adjust for the valid display of light and dark areas of a gray scale. (The light area should not be made light enough for a fuzzy display of cross-hatches within the monoscopic circle, nor should the dark area be made dark enough to disable identifying the darkest and second darkest stripes of a gray scale apart.)
324	**[Power supply of track shift and monitor jig]** • Do not use more than 2 kinds of power suplies simultaneously. • In connecting the track shift & monitor jig always use the specified connector. • Special caution should be taken because use of any power supply and voltage other than those mentioned above may cause damages.	**[Power supply of track shift and monitor jig]** • Do not use more than 2 kinds of power suplies simultaneously. • Use the connector which is attached to the track shift and monitor jig when connecting. • Special caution should be taken because use of any power supply and voltage other than those mentioned above may cause damages.
	8-4-2. Preparation for Adjustment 1) Perform cleaning of the tape running surface (the individual tape guides drums, capstan shafts and pinch rollers.) 2) Connection of oscilloscope 1ch: CH2 pin (RF signal) EXT TRIG: RF SWP pin (RF SWP signal) (Fig. 8-68.)	**8-4-2. Preparation for Adjustment** 1) Perform cleaning of the tape running surface (the individual tape guides drums, capstan shafts and pinch rollers.) 2) Connection of oscilloscope 1ch: CH2 pin: CH2 RF signal 2ch: RF SWP pin: RF SWP signal (Fig. 8-68.)
335	**9-3-2. Notch Filter fo Adjustment (SS-64 Board)** Adjusting method: 1) Adjust the oscillation frequency of the audio generator to 30±0.5 Hz. 2) Connect an oscilloscope to D503 and check the following two points: (See Fig. 9-4) 1. Make sure that the DC level is approximately 1.8Vdc when the audio generator is turned OFF. 2. Adjust the output level of the audio generator so that the 30 Hz sine wave signal level becomes 0.5 Vp-p. 3) Connect an oscilloscope to Pin ⑧ of IC504. 4) Adjust with RV501 so that the 30 Hz signal level becomes minimum.	**9-3-2. Notch Filter fo Adjustment (SS-64 Board)** Adjusting method: 1) Adjust the oscillation frequency of the audio generator to 30±0.5 Hz. 2) Connect an oscilloscope to D503 and check the following two points: (See Fig. 9-4) 1. Make sure that the DC level is approximately 1.8Vdc when the audio generator is turned OFF. 2. Adjust the output level of the audio generator so that the 30 Hz sine wave signal level becomes 0.5 Vp-p. 3) Connect an oscilloscope to Pin ⑦ of IC504. 4) Adjust with RV501 so that the 30 Hz signal level becomes minimum.

<table>
<tr><th>Page</th><th>Correct</th><th>Incorrect</th></tr>
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<td>346</td>
<td>

9-5-5. Overall Frequency Characteristics Check

<table>
<tr><td>Mode</td><td>Self-recording and playback</td></tr>
<tr><td>Signal</td><td>Ⓐ 400 Hz, −20 dBs
Ⓑ 30 Hz, −20 dBs
Ⓒ 14 kHz, −20 dBs</td></tr>
<tr><td>Measurement Point</td><td>See Fig. 9-31</td></tr>
<tr><td>Measuring Instrument</td><td>Audio level meter</td></tr>
<tr><td>Specified Value</td><td>When the 400 Hz playback output level is specified as 0 dB, the playback output levels of 30 Hz and 14 kHz become both 0±3 dB.</td></tr>
</table>
</td>
<td>

9-5-5. Overall Frequency Characteristics Check

<table>
<tr><td>Mode</td><td>Self-recording and playback</td></tr>
<tr><td>Signal</td><td>Ⓐ 400 Hz, −20 dBs
Ⓑ 30 Hz, −20 dBs
Ⓒ 4 Hz, −20 dBs</td></tr>
<tr><td>Measurement Point</td><td>See Fig. 9-31</td></tr>
<tr><td>Measuring Instrument</td><td>Audio level meter</td></tr>
<tr><td>Specified Value</td><td>When the 400 Hz playback output level is specified as 0 dB, the playback output levels of 30 Hz and 14 kHz become both 0±3 dB.</td></tr>
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</td>
</tr>
</table>

CCD-V110

SONY

SERVICE MANUAL

US Model
Canadian Model

SUPPLEMENT-2

The Camera section, Video section, Servo/System control section, Servo/Mechanism control section, and Viewfinder section were modified for improvements. Also the end of printed wiring board numbers were changed. Consequently, the schematic diagrams and printed wiring boards were partially revised.
Contents of main modifications are as follows.

● Camera section	
Camera (1)	
• ME-4 board	Alterations: resistor, capacitor, diode, transistor Elimination: capacitor
• CP-18 board	Alterations: resistor, capacitor, semi-fixed resistor Elimination: resistor, capacitor
Camera (2)	
• AT-5 board	Alteration: resistor
• AI-1 board	Alteration: resistor, capacitor
• AW-3 board	Alteration: resistor Elimination: D706 Connection change of IC701 Pins 41 , 47
Camera (3)	
• FC-10 board	Alteration: resistor, capacitor, switch, IC601 Elimination: Q623
• CG-1 board	Alteration: resistor, capacitor Elimination: Q673, Q674
• TI-8 board	Alteration: resistor Elimination: Q692, Q693
● Video section	
• VI-21 board	Alteration: resistor, capacitor
● Servo/System control section	
• SS-64 board	Alteration: resistor, capacitor, inductor, IC301, IC302, Q502 Elimination: Q335, resistor, capacitor
• DR-36 board	Alteration: resistor, capacitor Elimination: Q508, resistor, capacitor
• TS-55 board	Alteration: RV501
● Servo/Mechanism control section	
• SK-12 board	Alteration: resistor, capacitor
● Viewfinder section	
• VF-7 board	Alteration: resistor, capacitor

With issuing of Supplement-2, the end of numbers for the following printed wiring boards were changed to 14.
ME-4, CP-18, AT-5, AI-1, AW-3, TI-8, SK-12 and VF-7 boards Modifications on the schematic diagrams and printed wiring boards caused by changes of the ends are almost same the ends 11 and 12, also 13 and 14.
The following printed wiring boards were changed the ends to 13.
CG-1, FC-10, VI-21, SS-64, DR-36 and TS-55 boards Modifications on the schematic and printed wiring boards caused by ends changes are almost same the ends 11 and 12.

MICROFILM

VIDEO

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

ME-4 BOARD (Last two digits 14) CAMERA (1)

- **Parts to be replaced**

Ref. No.	Old	New
C709	1-163-109-00 CERAMIC CHIP 47PF 5% 50V	Deletes
C779	———	1-135-101-21 TANTAL CHIP 22MF 20% 6.3V
D704	8-719-101-23 DIODE 1SS123	8-719-801-54 DIODE 1SS190
Q721	8-729-100-76 TRANSISTOR 2SA812	8-719-200-74 TRANSISTOR 2SA1162
R722	1-216-033-00 METAL CHIP 220 5% 1/10W	1-216-077-00 METAL CHIP 15K 5% 1/10W
R740	1-216-081-00 METAL CHIP 22K 5% 1/10W	1-216-079-00 METAL CHIP 18K 5% 1/10W
R741	1-216-081-00 METAL CHIP 22K 5% 1/10W	1-216-077-00 METAL CHIP 15K 5% 1/10W
R793	1-216-083-00 METAL CHIP 27K 5% 1/10W	1-216-089-00 METAL CHIP 47K 5% 1/10W
R844	1-249-405-11 CARBON 100 5% 1/6W	1-216-025-00 METAL CHIP 100 5% 1/10W
R845	1-249-417-11 CARBON 1K 5% 1/6W	1-216-049-00 METAL CHIP 1K 5% 1/10W
R846	———	1-216-043-00 METAL CHIP 560 5% 1/10W
R847	———	1-216-087-00 METAL CHIP 39K 5% 1/10W

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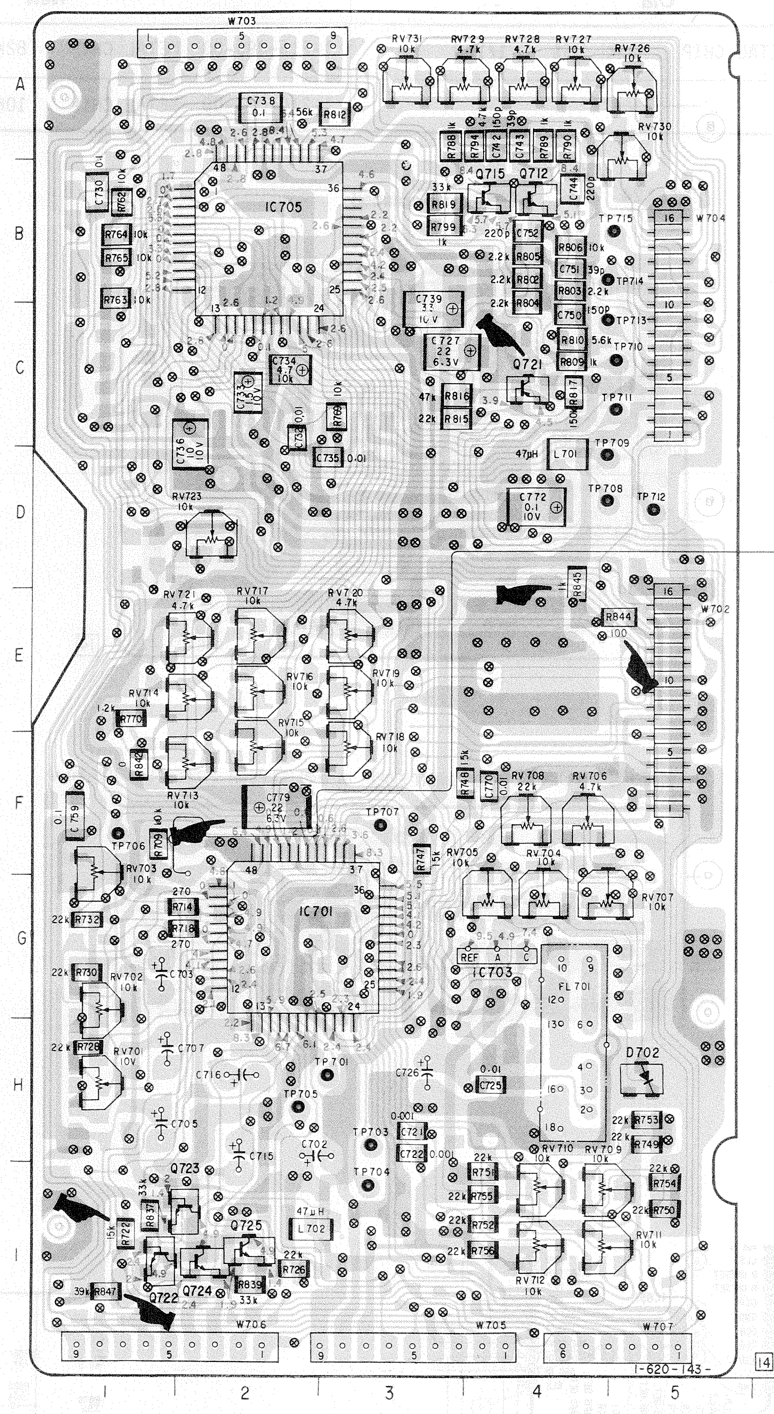
▨ : Deletes (Schematic diagram)

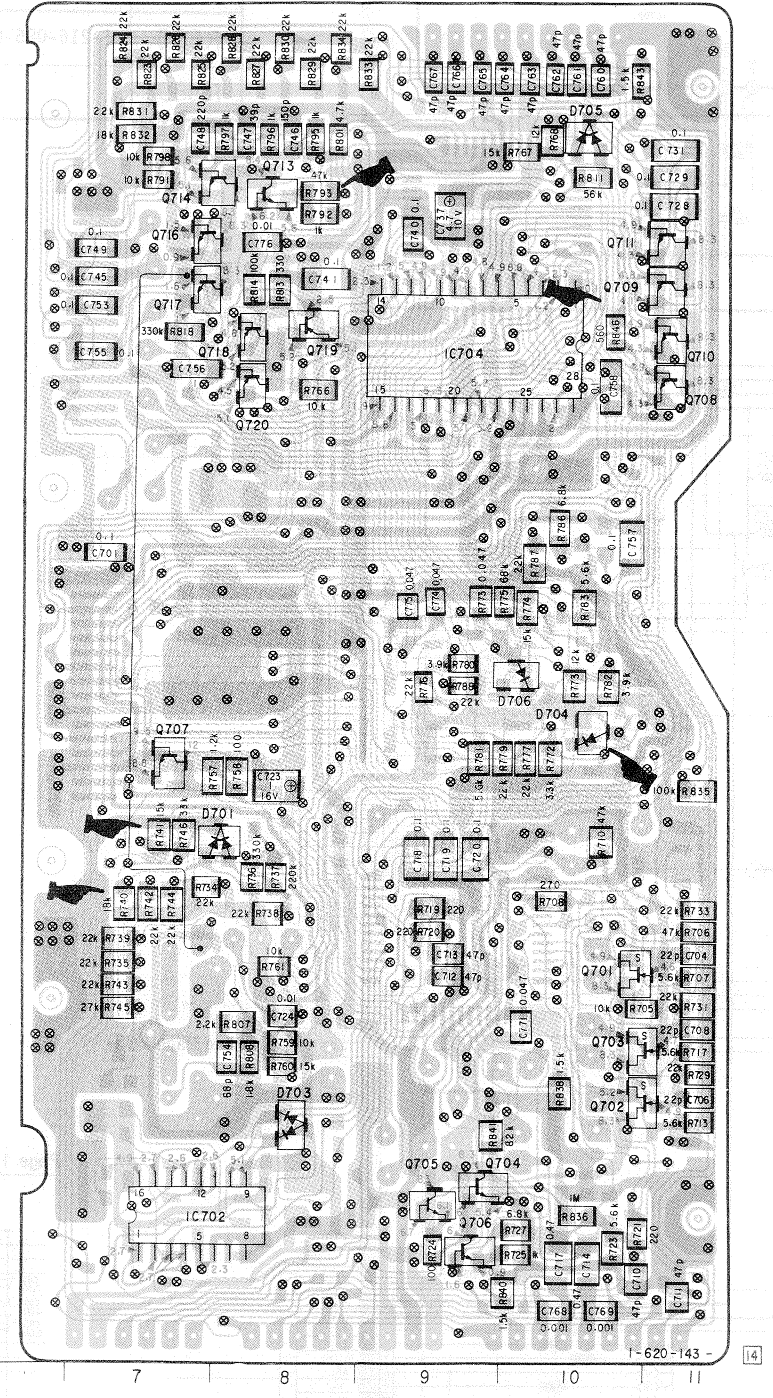
☛ : Replaced

D701	F-8
D702	H-5
D703	H-8
D704	E-10
D705	A-10
D706	E-10
IC701	G-3
IC702	I-7
IC703	G-4
IC704	C-9
IC705	B-2
Q701	G-10
Q702	H-10
Q703	H-10
Q704	I-9
Q705	I-9
Q706	I-9
Q707	F-7
Q708	C-11
Q709	B-11
Q710	C-11
Q711	B-11
Q712	B-4
Q713	B-8
Q714	B-7
Q715	B-4
Q716	B-7
Q717	C-7
Q718	C-8
Q719	C-8
Q720	C-8
Q721	C-4
Q722	I-1
Q723	I-2
Q724	I-2
Q725	I-2
RV701	H-1
RV702	G-1
RV703	F-1
RV704	G-4
RV705	G-4
RV706	F-4
RV707	G-5
RV708	F-4
RV709	I-5
RV710	I-4
RV711	I-5
RV712	I-4
RV713	F-2
RV714	E-2
RV715	F-2
RV716	E-2
RV717	E-2
RV718	F-3
RV719	E-3
RV720	E-3
RV721	E-2
RV723	D-2
RV726	A-5
RV727	A-4
RV728	A-4
RV729	A-3
RV730	A-5
RV731	A-3
TP701	H-3
TP703	H-3
TP704	I-3
TP705	H-2
TP706	F-1
TP707	F-3
TP708	D-4
TP709	D-4
TP710	C-5
TP711	C-5
TP712	D-5
TP713	C-5
TP714	B-5
TP715	B-5

ME 4 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode


A
B
C
D
E
F
G
H
I
1
2
3
4
5
IC705
IC701
IC703
W703
W704
W702
W706
W705
W707
1-620-143-
14

ME-4 BOARD (SOLDER SIDE) no mark : CAMERA POWER SW ON mode


6
7
8
9
10
11
IC704
IC702
1-620-143-
14

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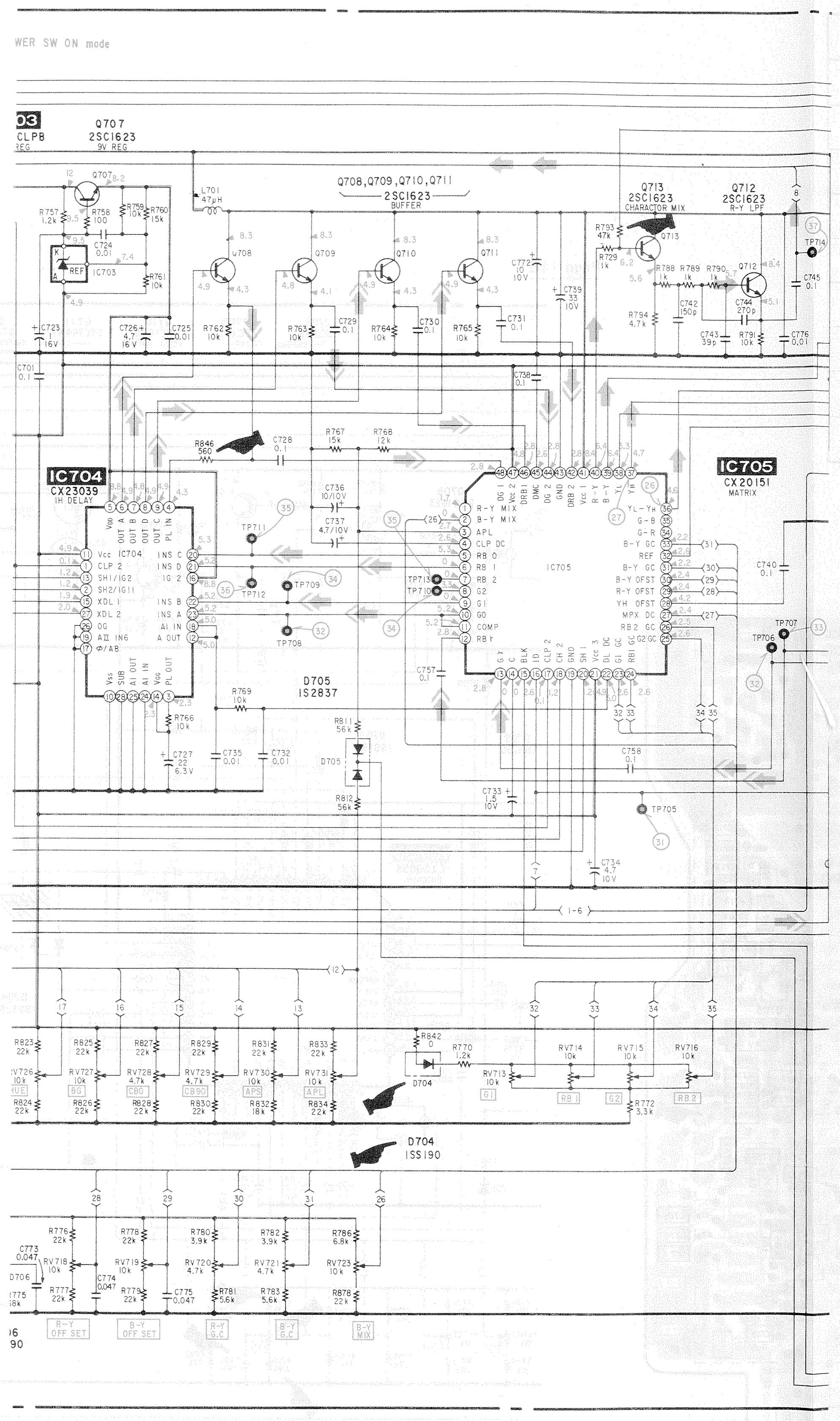
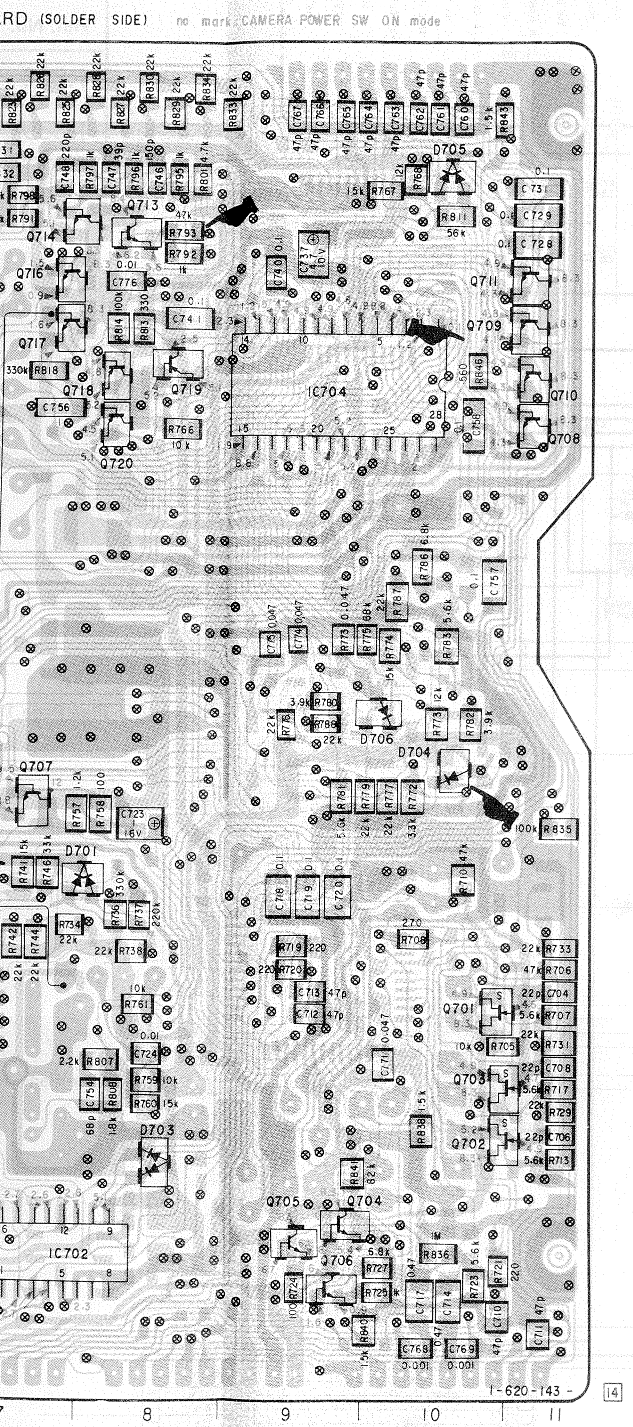
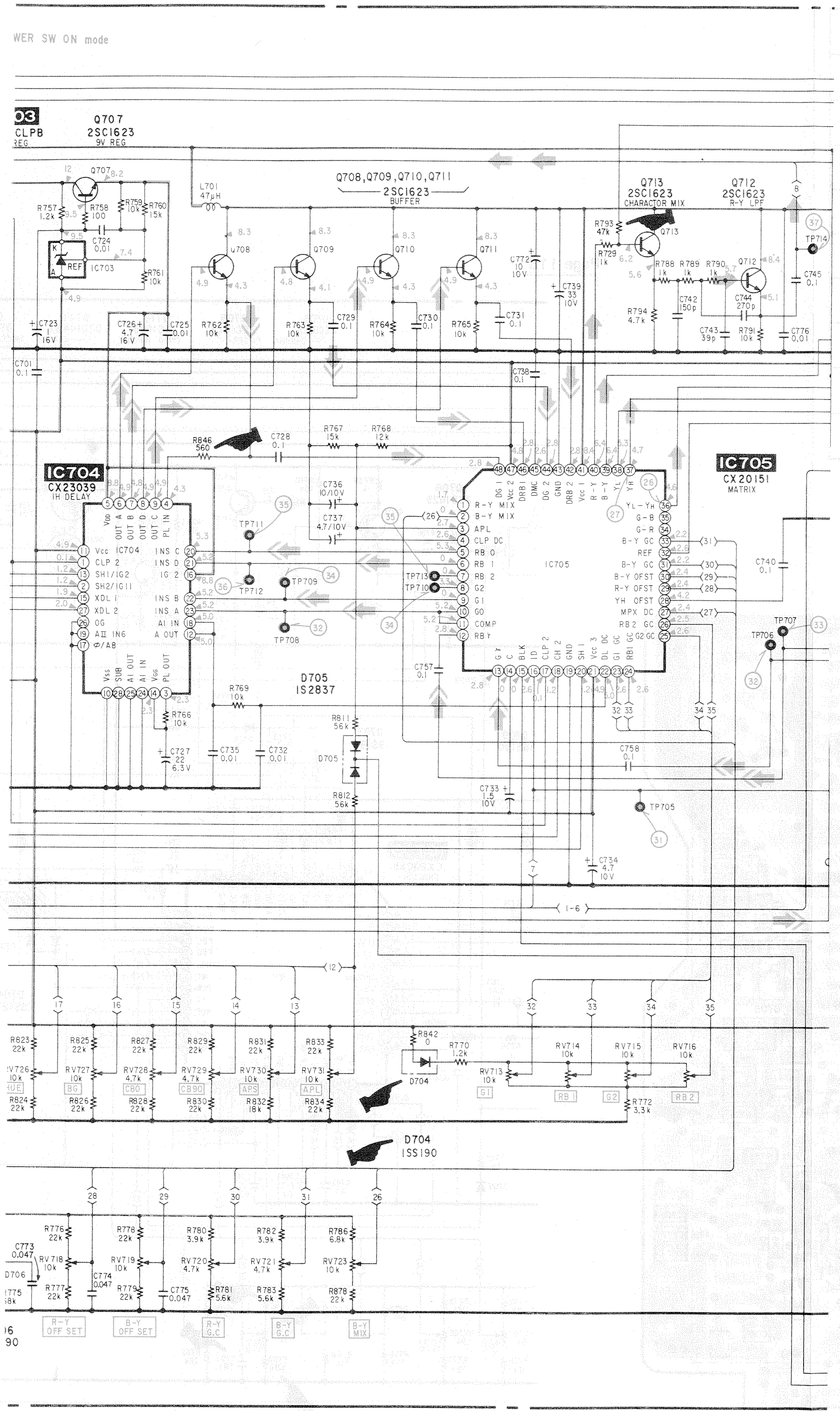
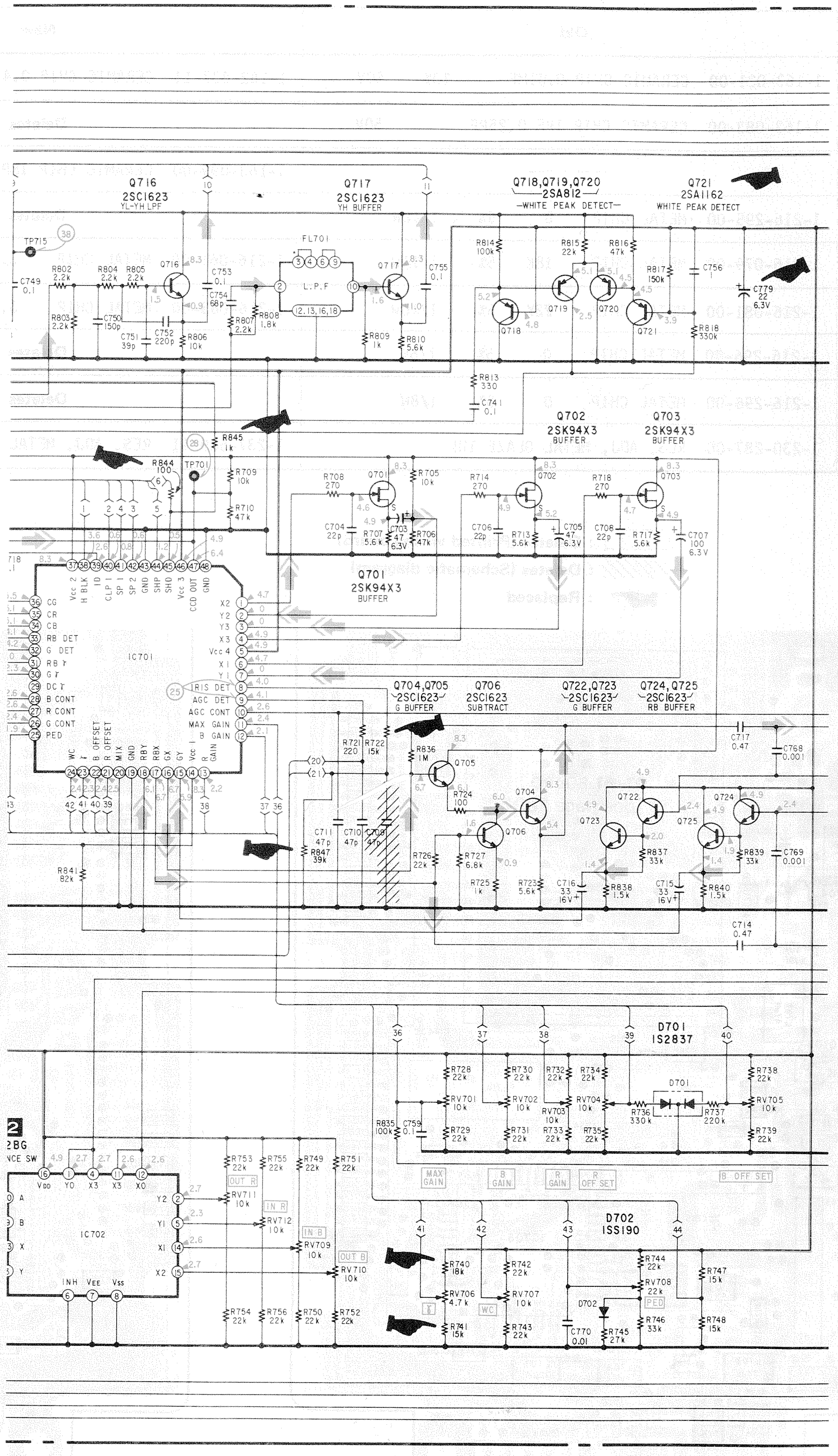

WER SW ON mode
Q707
2SC1623
9V REG
Q708,Q709,Q710,Q711
2SC1623
BUFFER
Q713
2SC1623
CHARACTOR MIX
Q712
2SC1623
R-Y LPF
IC704
CX23039
1H DELAY
IC705
CX20151
MATRIX
D705
1S2837
D704
1SS190


RD (SOLDER SIDE) no mark: CAMERA POWER SW ON mode
IC704
IC702
Q701
Q702
Q703
Q704
Q705
Q706
Q707
Q708
Q709
Q710
Q711
Q713
Q714
Q716
Q717
Q718
Q719
Q720
D701
D703
D704
D705
D706
1-620-143-
14
8
9
10
11


WER SW ON mode
Q707
2SC1623
9V REG
CLPB
Q708,Q709,Q710,Q711
2SC1623
BUFFER
Q713
2SC1623
CHARACTOR MIX
Q712
2SC1623
R-Y LPF
IC704
CX23039
1H DELAY
IC705
CX20151
MATRIX
D705
1S2837
D704
1SS190
IC703
L701
47μH
TP705
TP706
TP707
TP708
TP709
TP710
TP711
TP712
TP713
TP714
R-Y OFF SET
B-Y OFF SET
R-Y G.C
B-Y G.C
B-Y MIX
RB1
RB2
G1
G2


Q716
2SC1623
YL-YH LPF
Q717
2SC1623
YH BUFFER
Q718,Q719,Q720
2SA812
WHITE PEAK DETECT
Q721
2SA1162
WHITE PEAK DETECT
FL701
L.P.F
Q702
2SK94X3
BUFFER
Q703
2SK94X3
BUFFER
Q701
2SK94X3
BUFFER
IC701
Q704,Q705
2SC1623
G BUFFER
Q706
2SC1623
SUBTRACT
Q722,Q723
2SC1623
G BUFFER
Q724,Q725
2SC1623
RB BUFFER
D701
1S2837
D702
1SS190
IC702
MAX GAIN
B GAIN
R GAIN
R OFF SET
B OFF SET
TP701
TP715
OUT R
IN R
IN B
OUT B
WC
PED

CP-18 BOARD (Last two digits 14) CAMERA (1)

- Parts to be replaced

Ref. No.	Old	New
C722	1-163-021-00 CERAMIC CHIP 0.01MF 10% 50V	1-162-637-11 CERAMIC CHIP 0.47MF 16V
C788	1-163-083-00 CERAMIC CHIP 1PF 0.25PF 50V	Deletes
C791	———	1-163-099-00 CERAMIC CHIP 18PF 5% 50V
R750	1-216-295-00 METAL CHIP 0 5% 1/10W	Deletes
R759	1-216-079-00 METAL CHIP 18K 5% 1/10W	1-216-061-00 METAL CHIP 3.3K 5% 1/10W
R760	1-216-081-00 METAL CHIP 22K 5% 1/10W	1-216-063-00 METAL CHIP 3.9K 5% 1/10W
R784	1-216-296-00 METAL CHIP 0 5% 1/8W	Deletes
R785	1-216-296-00 METAL CHIP 0 5% 1/8W	Deletes
RV701	1-230-287-00 RES, ADJ, METAL GLAZE 10K	1-237-529-11 RES, ADJ, METAL FILM 1K

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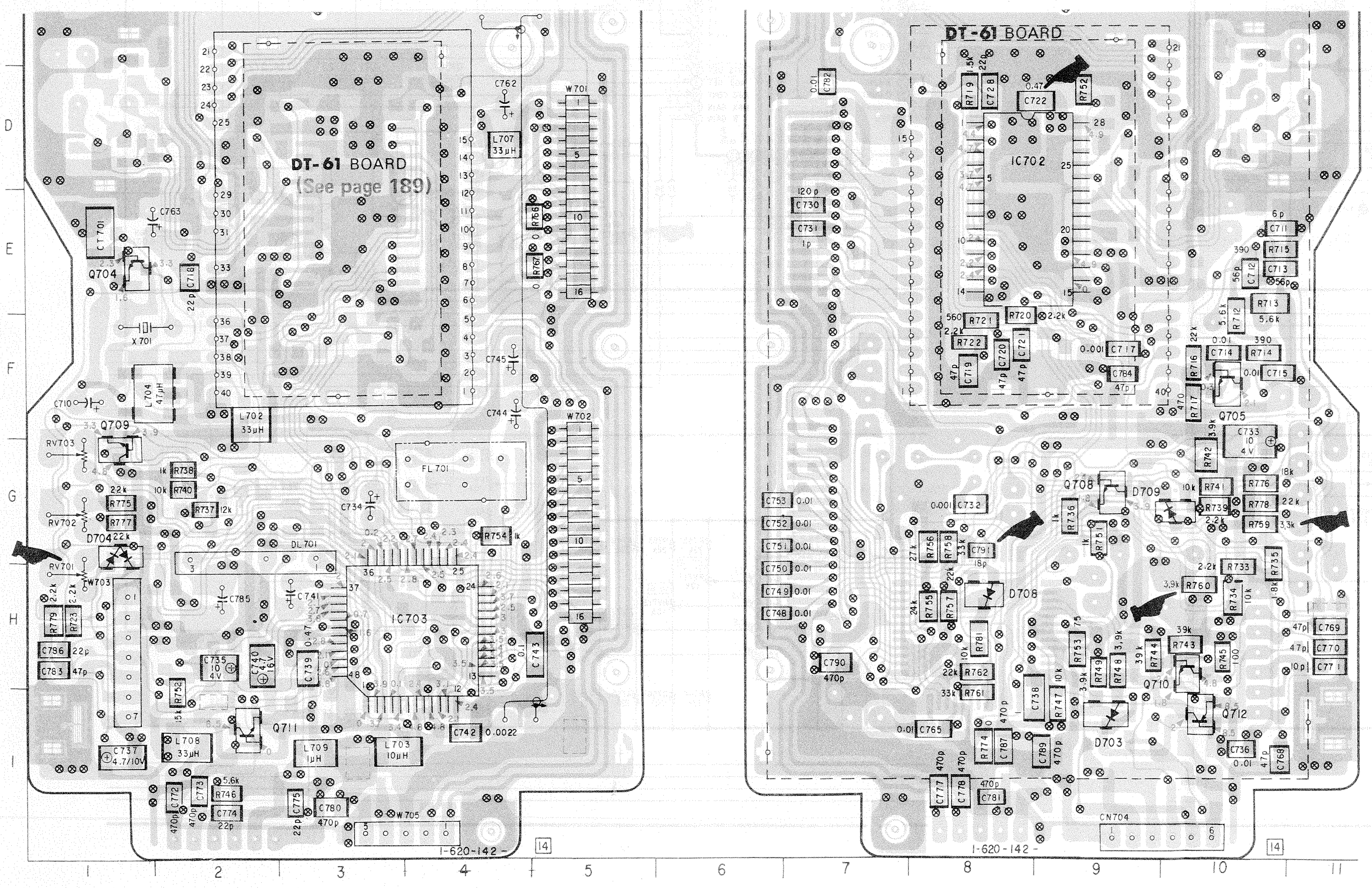
⬚ : Deletes (Printed wiring board)
▨ : Deletes (Schematic diagram)
☛ : Replaced


DT-61 BOARD
(See page 189)
DT-61 BOARD
IC703
IC702
FL701
DL701
W701
W702
W705
CN704
Q704
Q705
Q708
Q709
Q710
Q711
Q712
D703
D704
D708
D709
RV701
RV702
RV703
L702 33μH
L704 47μH
L707 33μH
L708 33μH
L709 1μH
L703 10μH
X701
C722
C788
C791
R759
R760
1-620-142
14
D
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F
G
H
I
1
2
3
4
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6
7
8
9
10
11

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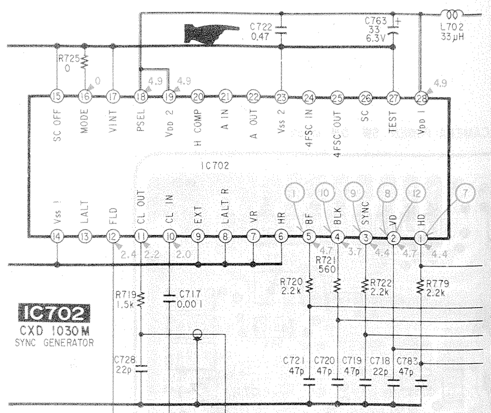
IC702
CXD 1030M
SYNC GENERATOR
C722 0.47
C763 3.3 6.3V
L702 33μH
R725 0
SC OFF
MODE
VINT
PSEL
Vss 2
H COMP
A IN
A OUT
Vss 2
4FSC IN
4FSC OUT
SC
TEST
Vdd
Vss 1
LALT
FLD
CL OUT
CL IN
EXT
LALT R
VR
HR
BF
BLK
SYNC
VD
HD
R719 1.5k
C717 0.001
R720 2.2k
R721 560
R722 2.2k
R779 2.2k
C728 22p
C721 47p
C720 47p
C719 47p
C718 22p
C783 47p

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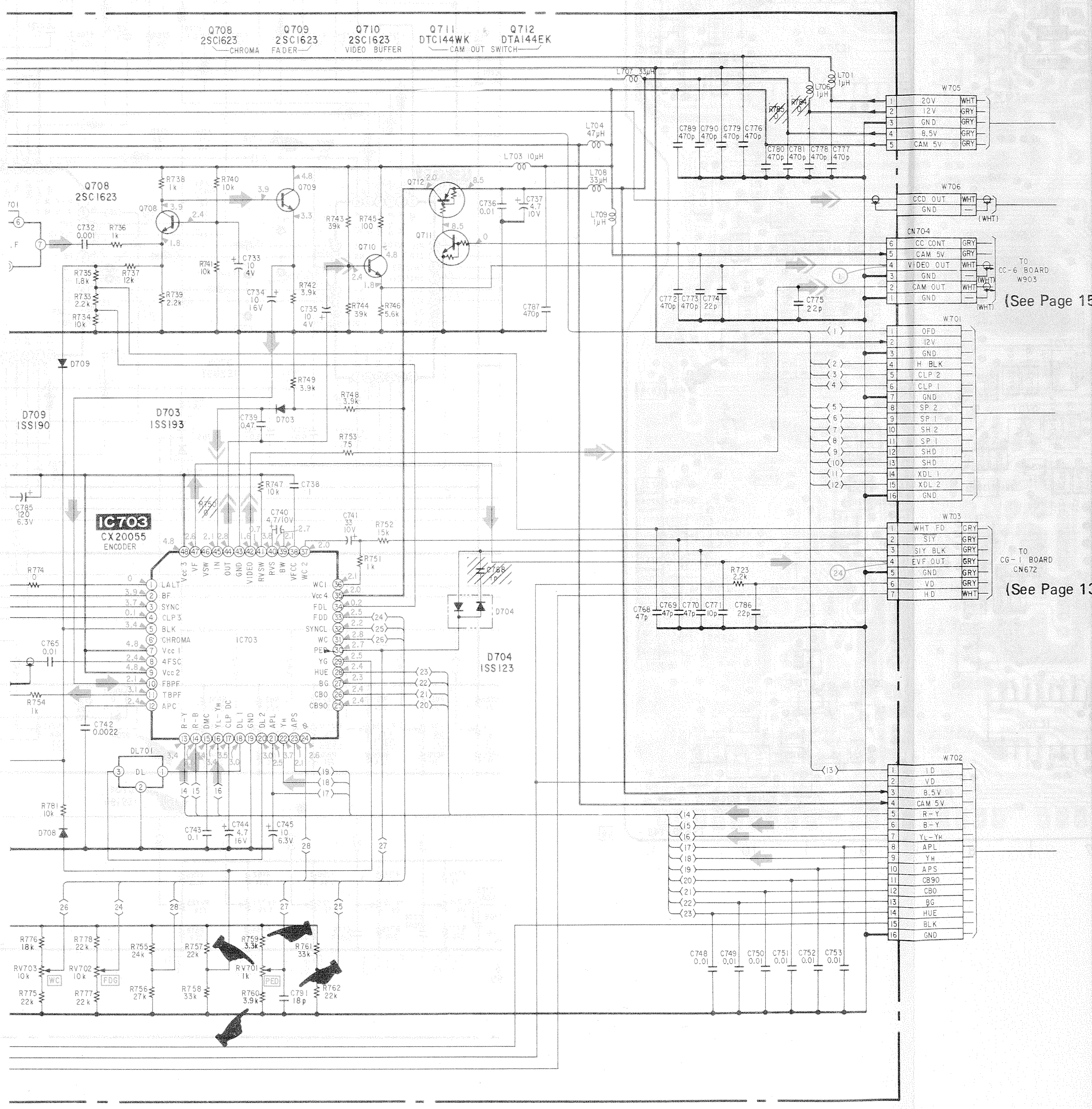
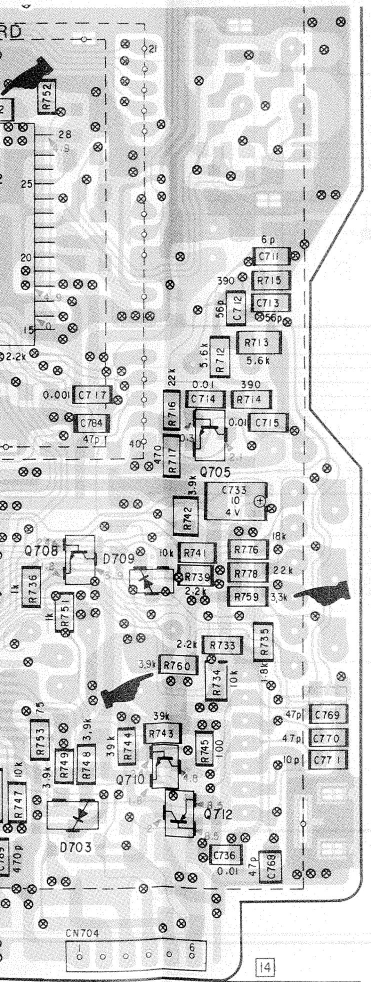

Q708 2SC1623 CHROMA
Q709 2SC1623 FADER
Q710 2SC1623 VIDEO BUFFER
Q711 DTC144WK
Q712 DTA144EK CAM OUT SWITCH
IC703
CX20055
ENCODER
D709 1SS190
D703 1SS193
D704 1SS123
DL701
W705
W706
CN704
W701
W703
W702
TO CC-6 BOARD W903
(See Page 15
TO CG-1 BOARD CN672
(See Page 13
20V
12V
GND
8.5V
CAM 5V
CCD OUT
CC CONT
CAM 5V
VIDEO OUT
GND
CAM OUT
OFD
H BLK
CLP 2
CLP 1
SP 2
SP 1
SH 2
SH 1
SHD
XDL 1
XDL 2
WHT FD
SIY
SIY BLK
EVF OUT
VD
HD
ID
R-Y
B-Y
YL-YH
APL
YH
APS
CB90
CB0
SG
HUE
BLK
RV701 1k
RV702 10k
RV703 10k
WC
FDS
R759 3.3k
R760 3.9k
C791 18p

AT-5 BOA

- Parts to

Ref. No.
R888
R889

16V
50V
/10W
/10W


Q705
Q708
D709
Q710
Q712
D703
CN704
9
10
11
14

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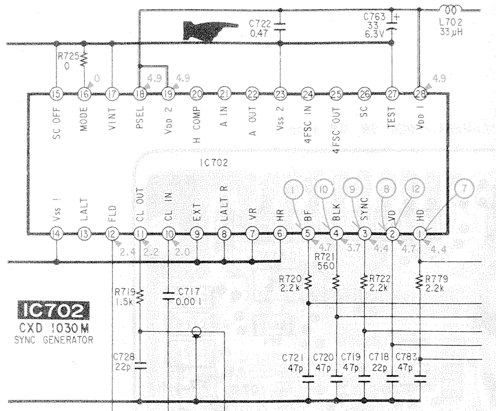
IC702
CXD 1030M
SYNC GENERATOR
L702 33μH

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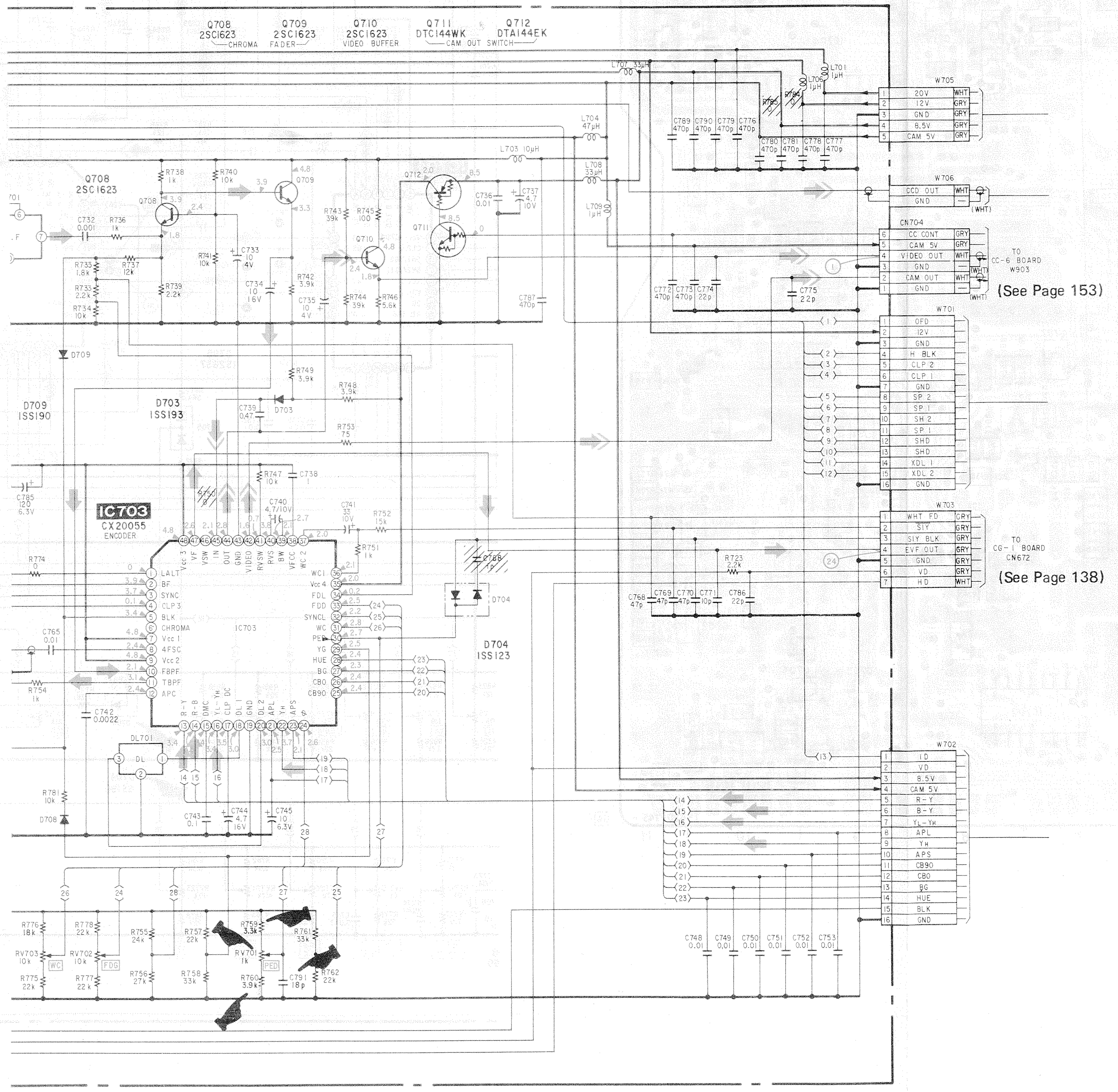
Q708 2SC1623 CHROMA
Q709 2SC1623 FADER
Q710 2SC1623 VIDEO BUFFER
Q711 DTC144WK
Q712 DTA144EK CAM OUT SWITCH
D709 1SS190
D703 1SS193
IC703 CX20055 ENCODER
D704 1SS123
W705
W706
CN704
TO CC-6 BOARD W903
(See Page 153)
W701
W703
TO CG-1 BOARD CN672
(See Page 138)
W702

AT-5 BOARD (Last two digits 14) CAMERA (2)

- Parts to be replaced

Ref. No.	Old	New
R888	1-216-085-00 METAL CHIP 33K 5% 1/10W	1-216-095-00 METAL CHIP 82K 5% 1/10W
R889	———	1-216-073-00 METAL CHIP 10K 5% 1/10W

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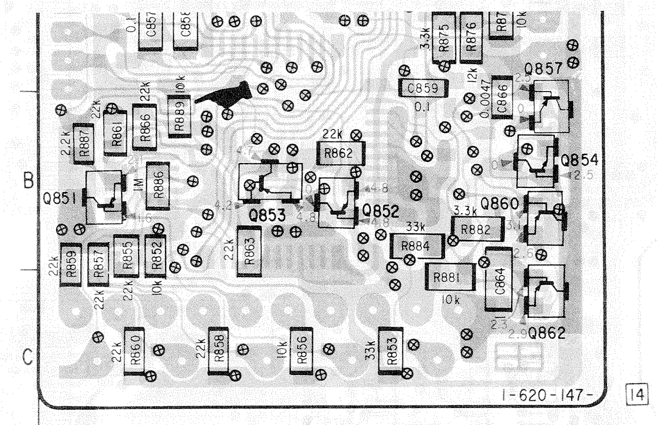
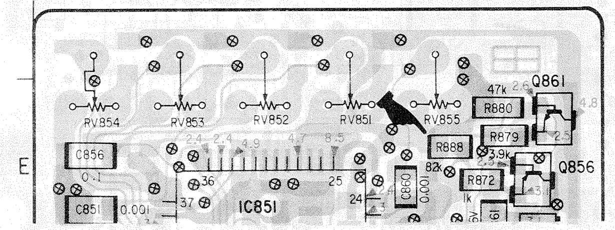
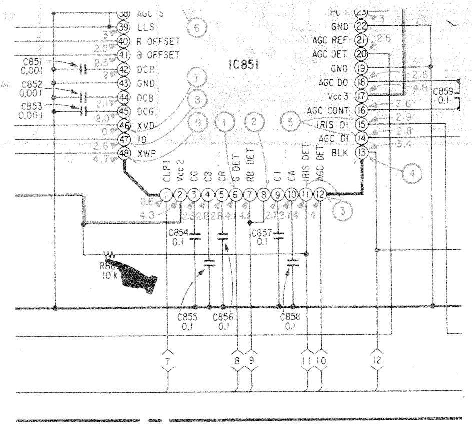
- : Replaced


B
C
Q851
Q852
Q853
Q854
Q857
Q860
Q862
R888
R889
1-620-147-
14

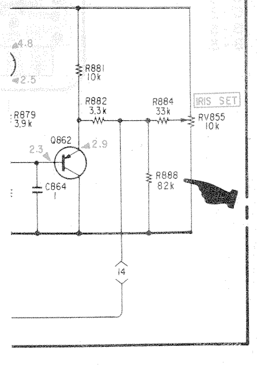
D **AT-5** BOARD (COMPONENT SIDE) no mark:CAMERA POWER SW ON mode


E
RV854
RV853
RV852
RV851
RV855
Q861
Q856
IC851
R888

Page 129



Page 129


Q862
R888 82k
RV855 10k
IRIS SET

AI-1 BOARD (Last to be replaced [14]) [CAMERA (2)]

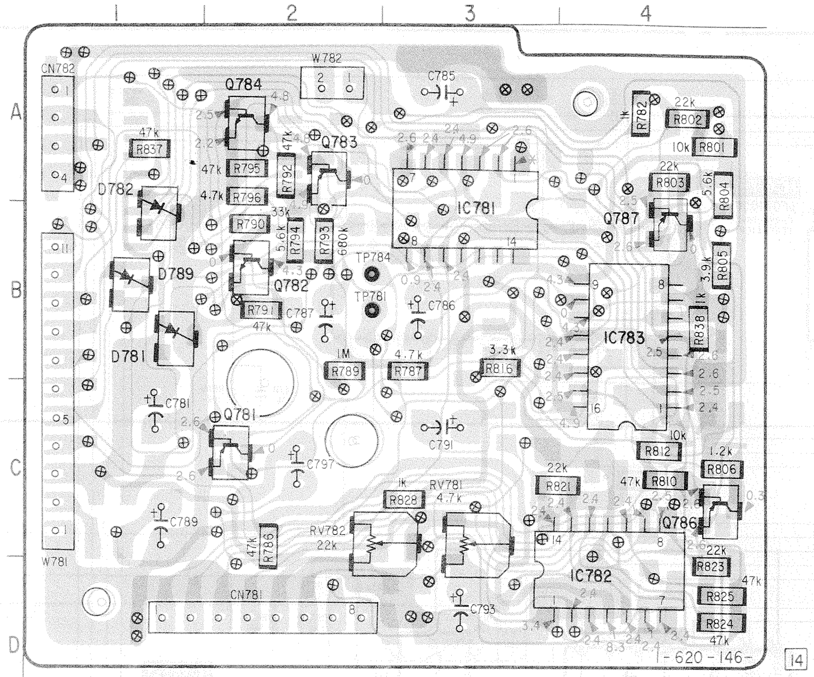
- As to parts to be replaced, refer to the Electrical parts list.

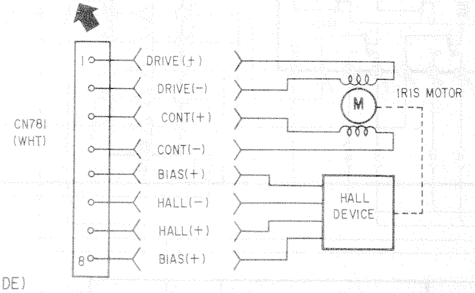
Page 126

D781	B-1
D782	B-1
D783	H-4
D784	G-4
D785	G-4
D786	G-4
D789	B-1
IC781	B-3
IC782	D-4
IC783	B-4
IC784	H-2
Q781	C-2
Q782	B-2
Q783	A-2
Q784	A-2
Q785	I-2
Q786	C-4
Q787	B-4
Q788	H-4
Q789	H-3
Q790	H-4
Q791	G-4
Q792	G-3
Q793	I-4
RV781	C-3
RV782	C-2
TP781	B-2
TP784	B-2

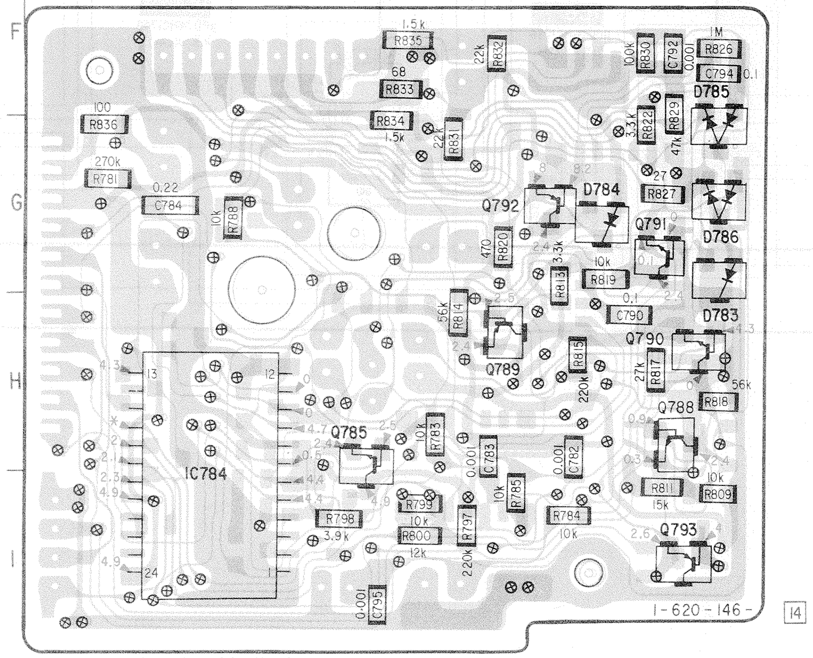
AI-1 BOARD(COMPONENT SIDE)

no mark : CAMERA POWER SW ON mode
＊ : can not be measured


1
2
3
4
A
B
C
D
CN782
W782
C785
Q784
Q783
R837
R795
R796
R792
D782
IC781
R802
R801
R803
R804
Q787
R805
R790
R794
R793
D789
Q782
TP784
TP781
C786
IC783
R838
R791
C787
D781
R789
R787
R816
C781
Q781
C791
R812
R806
C797
R810
R821
R828
RV781
Q786
C789
R786
RV782
IC782
R823
R825
R824
W781
CN781
C793
1-620-146-
14


CN781
(WHT)
1
8
DRIVE(+)
DRIVE(−)
CONT(+)
CONT(−)
BIAS(+)
HALL(−)
HALL(+)
BIAS(+)
M
IRIS MOTOR
HALL
DEVICE

AI-1 BOARD(SOLDER SIDE)


E
F
G
H
I
R835
R832
R830
C792
R826
C794
D785
R833
R836
R834
R831
R822
R829
R781
C784
R788
Q792
D784
R827
Q791
D786
R820
R813
R819
C790
D783
R814
Q790
Q789
R815
R817
R818
Q788
IC784
Q785
R783
C783
C782
R785
R799
R798
R800
R797
R784
R811
R809
Q793
C795
1-620-146-
14

no mark : CAMERA POWER SW ON mode
＊ : can not be measured

AW-3 BOARD (Last two digits 14) CAMERA (

- **Parts to be replaced**

Ref. No.	Old
D706	8-719-801-48 DIODE 1SS193
R736	———

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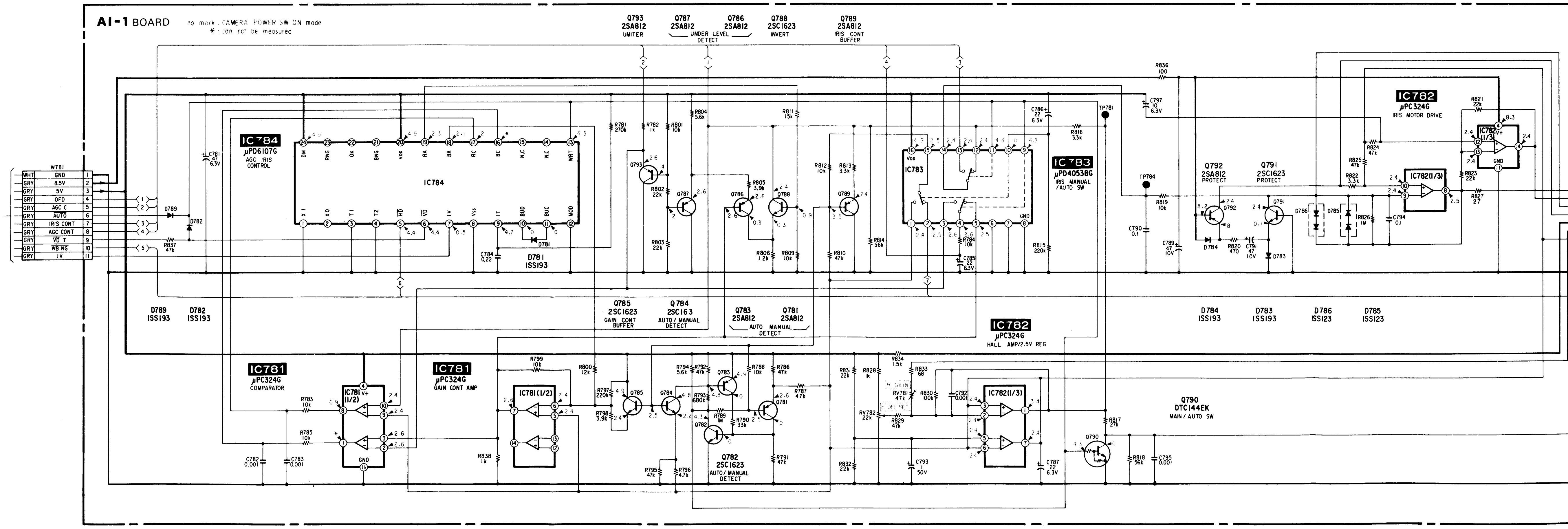
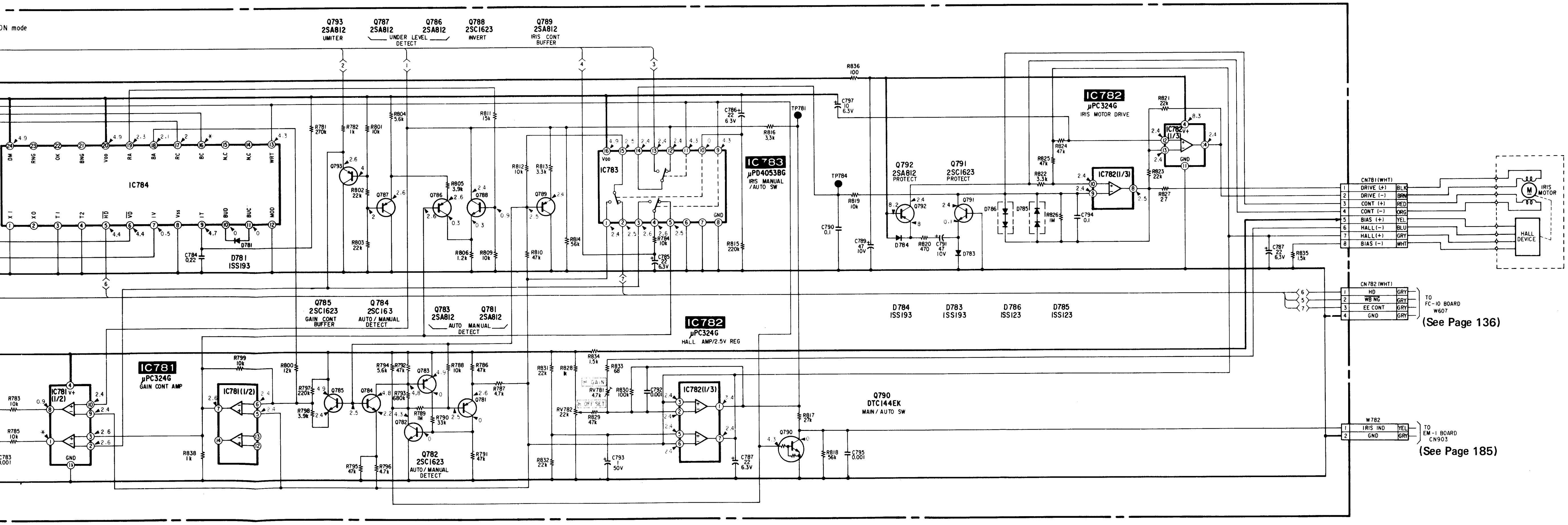

AI-1 BOARD
no mark : CAMERA POWER SW ON mode
✱ : can not be measured
Q793 2SA812 LIMITER
Q787 2SA812
Q786 2SA812 UNDER LEVEL DETECT
Q788 2SC1623 INVERT
Q789 2SA812 IRIS CONT BUFFER
W781
GND
8.5V
5V
OFD
AGC C
AUTO
IRIS CONT
AGC CONT
VD T
WB NG
IV
IC784 μPD6107G AGC IRIS CONTROL
D781 1SS193
IC783 μPD4053BG IRIS MANUAL /AUTO SW
IC782 μPC324G IRIS MOTOR DRIVE
Q792 2SA812 PROTECT
Q791 2SC1623 PROTECT
D789 1SS193
D782 1SS193
Q785 2SC1623 GAIN CONT BUFFER
Q784 2SC163 AUTO/MANUAL DETECT
Q783 2SA812
Q781 2SA812 AUTO MANUAL DETECT
IC782 μPC324G HALL AMP/2.5V REG
D784 1SS193
D783 1SS193
D786 1SS123
D785 1SS123
IC781 μPC324G COMPARATOR
IC781 μPC324G GAIN CONT AMP
Q782 2SC1623 AUTO/MANUAL DETECT
Q790 DTC144EK MAIN/AUTO SW

AW-3 BOARD (Last two digits 14) CAMERA (2)

- **Parts to be replaced**

Ref. No.	Old	New
D706	8-719-801-48 DIODE 1SS193	Deletes
R736	————	1-216-059-00 METAL CHIP 2.7K 5% 1/10W


ON mode
Q793 2SA812 LIMITER
Q787 2SA812
Q786 2SA812
UNDER LEVEL DETECT
Q788 2SC1623 INVERT
Q789 2SA812 IRIS CONT BUFFER
IC784
D781 1SS193
IC783
IC783 μPD4053BG IRIS MANUAL /AUTO SW
TP781
TP784
IC782 μPC324G IRIS MOTOR DRIVE
Q792 2SA812 PROTECT
Q791 2SC1623 PROTECT
IC782(1/3)
CN781(WHT)
DRIVE (+)
DRIVE (−)
CONT (+)
CONT (−)
BIAS (+)
HALL(−)
HALL(+)
BIAS (−)
IRIS MOTOR
HALL DEVICE
Q785 2SC1623 GAIN CONT BUFFER
Q784 2SC163 AUTO / MANUAL DETECT
Q783 2SA812
Q781 2SA812
AUTO MANUAL DETECT
IC782 μPC324G HALL AMP/2.5V REG
D784 1SS193
D783 1SS193
D786 1SS123
D785 1SS123
CN782(WHT)
HD
WB NG
EE CONT
GND
TO FC-10 BOARD W607
(See Page 136)
IC781 μPC324G GAIN CONT AMP
IC781(1/2)
Q782 2SC1623 AUTO/MANUAL DETECT
H GAIN
H OFFSET
Q790 DTC144EK MAIN / AUTO SW
W782
IRIS IND
GND
TO EM-1 BOARD CN903
(See Page 185)

1/10W

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☐ : Deletes (Printed wiring board)

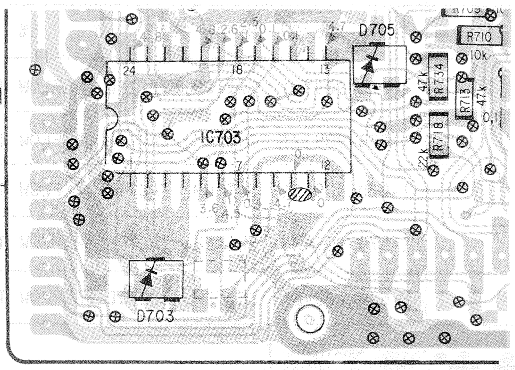
▨ : Deletes (Schematic diagram)

☛ : Replaced

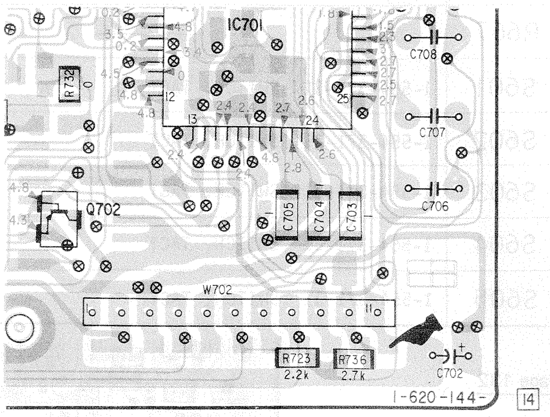
Page 125

(SOLER SIDE)

(COMPONENT SIDE)



IC703
D705
D703
R710
R734
R713
R718
47k
10k
22k
H



IC701
Q702
C708
C707
C706
C705
C704
C703
R732
W702
R723
2.2k
R736
2.7k
C702
1-620-144-
14

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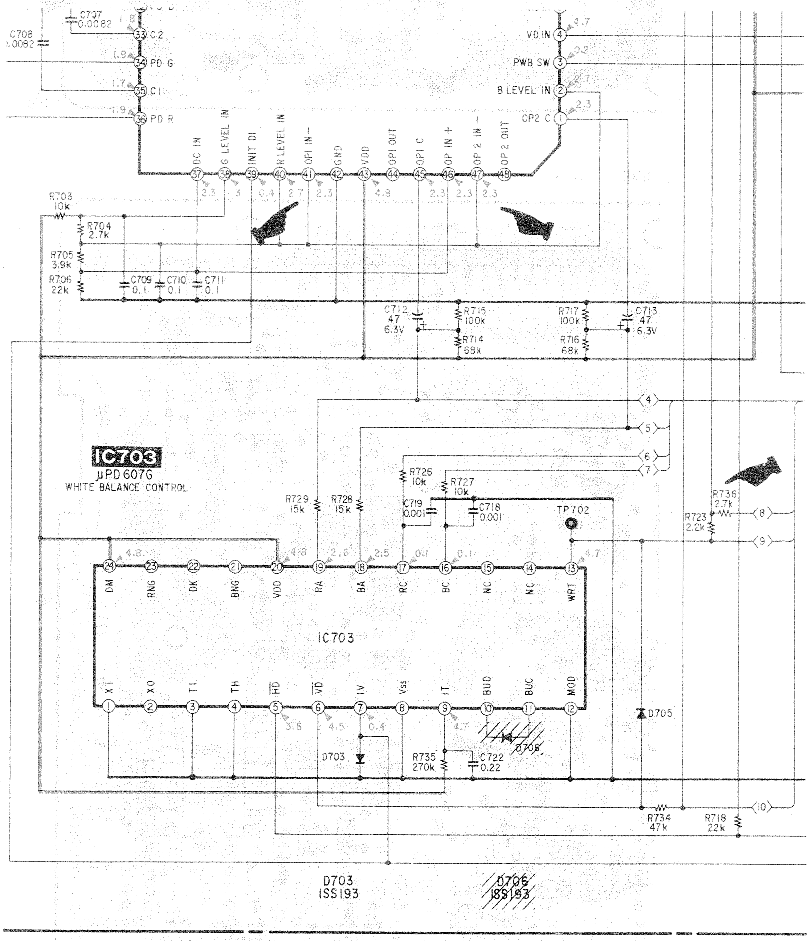

IC703
µPD607G
WHITE BALANCE CONTROL
C707 0.0082
C708 .0082
C2
PD G
C1
PD R
VD IN
PWB SW
B LEVEL IN
OP2 C
DC IN
G LEVEL IN
INIT DI
R LEVEL IN
OP1 IN−
GND
VDD
OP1 OUT
OP1 C
OP IN +
OP 2 IN −
OP 2 OUT
R703 10k
R704 2.7k
R705 3.9k
R706 22k
C709 0.1
C710 0.1
C711 0.1
C712 47 6.3V
R715 100k
R714 68k
R717 100k
R716 68k
C713 47 6.3V
R726 10k
R727 10k
R729 15k
R728 15k
C719 0.001
C718 0.001
TP702
R736 2.7k
R723 2.2k
DM
RNG
DK
BNG
VDD
RA
BA
RC
BC
NC
NC
WRT
XI
XO
TI
TH
HD
VD
IV
Vss
IT
BUD
BUC
MOD
D705
D706
D703
R735 270k
C722 0.22
R734 47k
R718 22k
D703 1SS193
D706 1SS193

FC-10 BOARD (Last two digits 13) CAMERA (3)

- Parts to be replaced

Ref. No.	Old	New
C604	1-163-093-00 CERAMIC CHIP 10P 5% 50V	1-163-105-00 CERAMIC CHIP 33P 5% 50V
IC601	8-759-107-94 IC UPD7508G-756-00	8-759-112-03 IC UPD7508G-769-00
Q623	8-729-901-03 TRANSISTOR DTC144WK	Deletes
R622	R628 1-216-097-00 METAL CHIP 100K 5% 1/10W	R622 1-216-097-00 METAL CHIP 100K 5% 1/10W
R667	——	1-216-295-00 METAL CHIP 0 5% 1/10W
S601	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)
S602	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)
S603	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)
S604	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)
S605	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)

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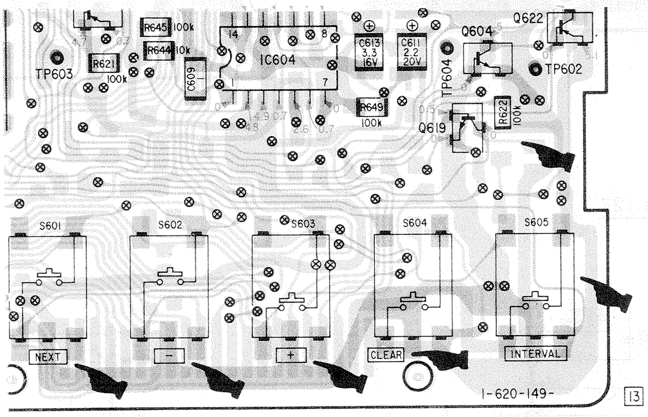
Page 135

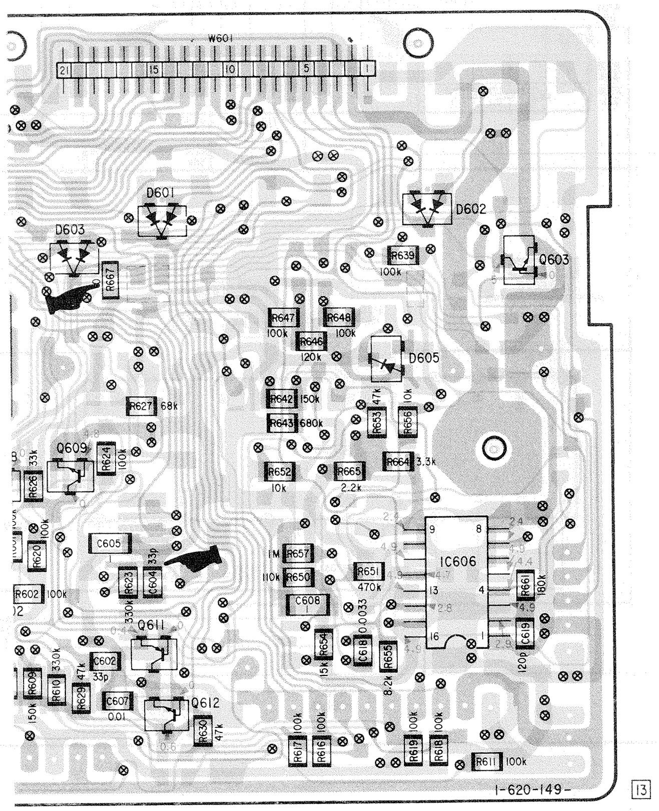


TP603
R645 100k
R644 10k
R621 100k
C609
IC604
C613 3.3 16V
C611 2.2 20V
Q604
Q622
TP604
TP602
R649 100k
Q619
R622 100k
S601
S602
S603
S604
S605
NEXT
−
+
CLEAR
INTERVAL
1-620-149-
13

TO DR-901 DC-DC CONVERTER CN004
W602
(See Page 117)

TO AU-24 BOARD CN403
W603
(See Page 180)

SIDE) no mark: CAMERA POWER SW ON mode



W601
21
15
10
5
1
D601
D602
D603
Q603
R667
R639 100k
R647 100k
R648 100k
R646 120k
D605
R627 68k
R642 150k
R643 680k
R653 47k
R656 10k
Q609
R626 33k
R624 100k
R652 10k
R665 2.2k
R664 3.3k
IC606
R620 100k
C605
R623 330k
C604 33p
R657 1M
R650 110k
R651 470k
R661 180k
C608
R602 100k
Q611
R654 15k
C618 0.0033
R655 8.2k
C619 120p
C602 33p
R609 150k
R610 330k
R629 47k
C607 0.01
Q612
R630 47k
R617 100k
R616 100k
R619 100k
R618 100k
R611 100k
1-620-149-
13

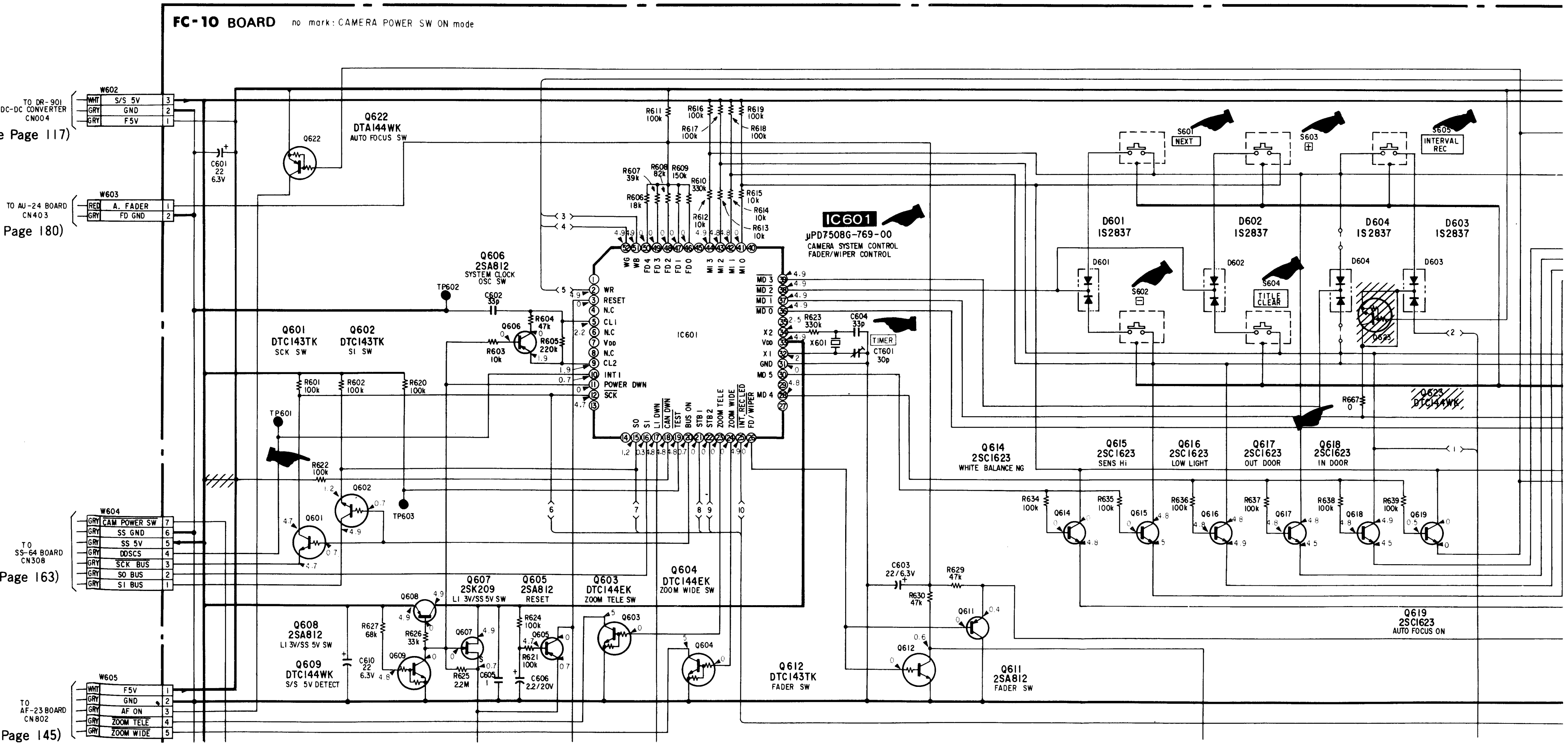
TO SS-64 BOARD CN308
W604
(See Page 163)

TO AF-23 BOARD CN802
W605
(See Page 145)

5% 50V
0
K 5% 1/10W
5% 1/10W
EFLOW TYPE)
EFLOW TYPE)
EFLOW TYPE)
EFLOW TYPE)
EFLOW TYPE)

135

[- - - -] : Deletes (Printed wiring board)
////// : Deletes (Schematic diagram)
☛ : Replaced


FC-10 BOARD no mark: CAMERA POWER SW ON mode
TO DR-901 DC-DC CONVERTER CN004
Page 117)
W602
S/S 5V
GND
F5V
TO AU-24 BOARD CN403
Page 180)
W603
A. FADER
FD GND
TO SS-64 BOARD CN308
Page 163)
W604
CAM POWER SW
SS GND
SS 5V
DDSCS
SCK BUS
SO BUS
SI BUS
TO AF-23 BOARD CN802
Page 145)
W605
F5V
GND
AF ON
ZOOM TELE
ZOOM WIDE
Q622 DTA144WK AUTO FOCUS SW
C601 22 6.3V
IC601
μPD7508G-769-00 CAMERA SYSTEM CONTROL FADER/WIPER CONTROL
Q606 2SA812 SYSTEM CLOCK OSC SW
TP602
C602 33p
Q601 DTC143TK SCK SW
Q602 DTC143TK SI SW
R601 100k
R602 100k
R620 100k
TP601
R622 100k
TP603
R604 47k
R605 220k
R603 10k
R611 100k
R616 100k
R617 100k
R619 100k
R618 100k
R607 39k
R608 82k
R609 150k
R610 330k
R606 18k
R612 10k
R615 10k
R614 10k
R613 10k
R623 330k
C604 33p
X601
CT601 30p
TIMER
WR
RESET
N.C
CL1
N.C
VDD
N.C
CL2
INT1
POWER DWN
SCK
MD3
MD2
MD1
MD0
X2
VDD
X1
GND
MD5
MD4
S601 NEXT
S603
S605 INTERVAL REC
D601 1S2837
D602 1S2837
D604 1S2837
D603 1S2837
S602
S604 TITLE CLEAR
Q625 DTC144WK
R667 0
Q614 2SC1623 WHITE BALANCE NG
Q615 2SC1623 SENS Hi
Q616 2SC1623 LOW LIGHT
Q617 2SC1623 OUT DOOR
Q618 2SC1623 IN DOOR
R634 100k
R635 100k
R636 100k
R637 100k
R638 100k
R639 100k
Q619 2SC1623 AUTO FOCUS ON
Q607 2SK209 L1 3V/SS 5V SW
Q605 2SA812 RESET
Q603 DTC144EK ZOOM TELE SW
Q604 DTC144EK ZOOM WIDE SW
Q608 2SA812 L1 3V/SS 5V SW
Q609 DTC144WK S/S 5V DETECT
R627 68k
R626 33k
C610 22 6.3V
R625 2.2M
R624 100k
R621 100k
C606 2.2/20V
C603 22/6.3V
R629 47k
R630 47k
Q612 DTC143TK FADER SW
Q611 2SA812 FADER SW

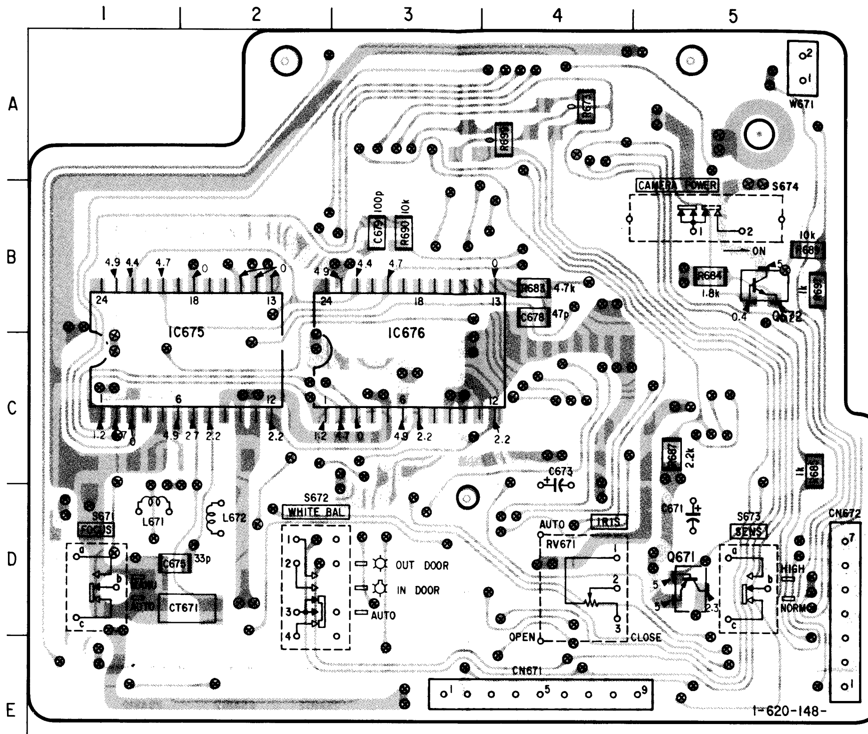
CG-1 BOARD (Last two digits [13]) [CAMERA (3)]

- As to parts to be replaced, refer to the Electrical parts list.

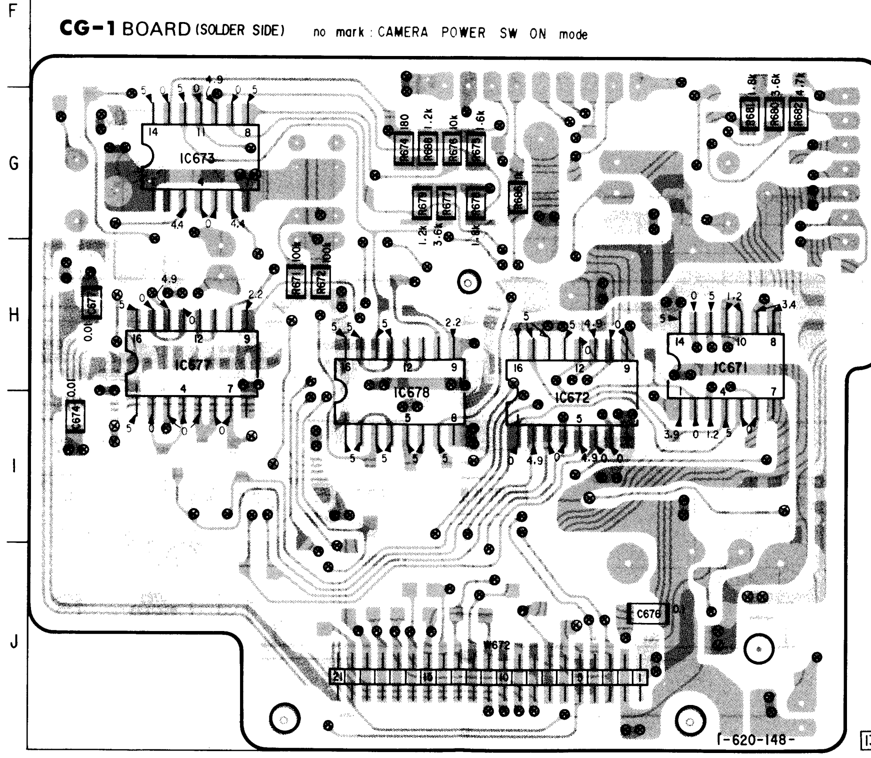
Page 133

CT671	D-1
IC671	H-5
IC672	H-4
IC673	G-1
IC675	C-1
IC676	C-3
IC677	H-1
IC678	H-3
Q671	D-5
Q672	B-5
RV671	D-4

CG-1 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode


1
2
3
4
5
A
B
C
D
E
IC675
IC676
CAMERA POWER
S674
ON
Q672
S671 FOCUS
L671
L672
S672 WHITE BAL
OUT DOOR
IN DOOR
AUTO
CT671
C673
AUTO
IRIS
RV671
OPEN
CLOSE
Q671
S673 SENS
HIGH
NORM
CN671
CN672
1-620-148-

CG-1 BOARD (SOLDER SIDE) no mark : CAMERA POWER SW ON mode


F
G
H
I
J
IC673
IC677
IC678
IC672
IC671
C676
1-620-148-

vo digits 13) CAMERA (3)

placed, refer to the Electrical parts list.

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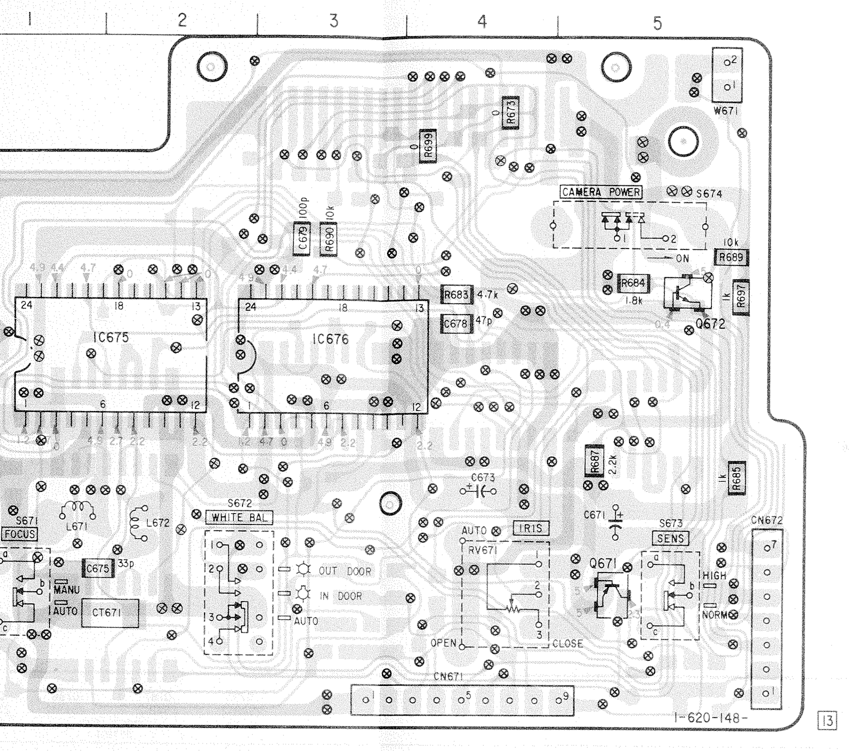
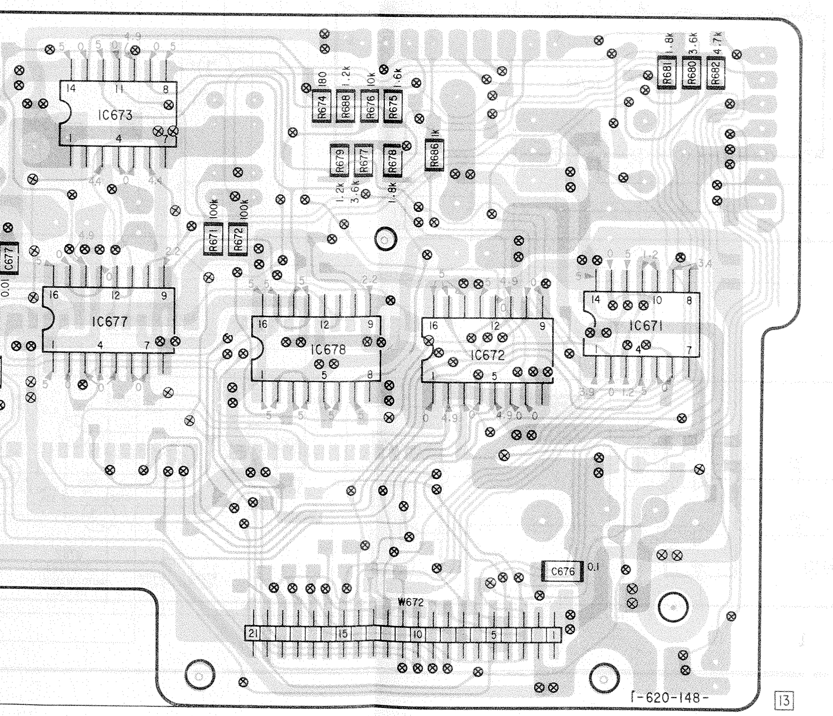
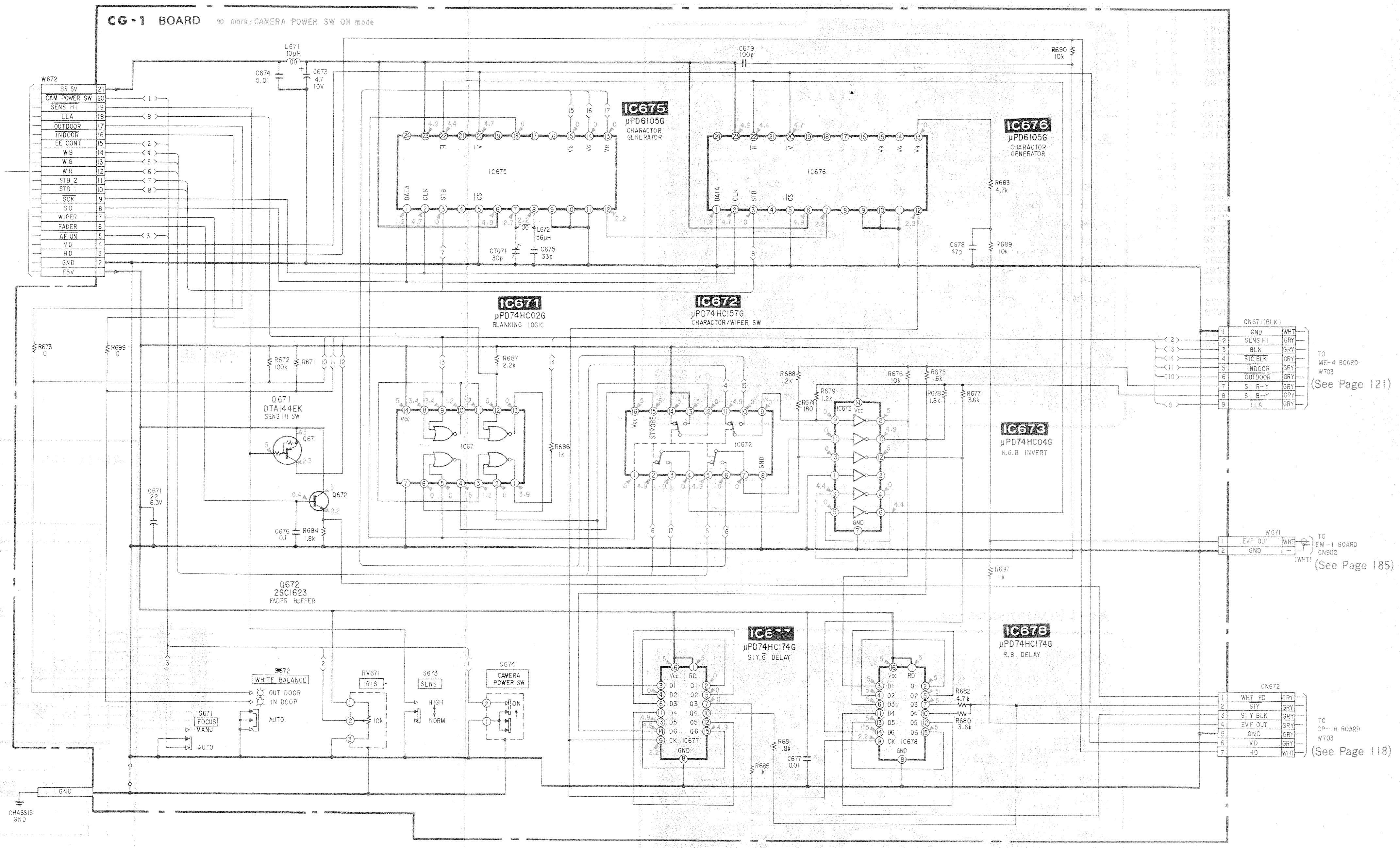
G-1 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode


1
2
3
4
5
W671
R673
R699
CAMERA POWER
S674
C679 100p
R690 10k
R689 10k
IC675
IC676
R683 4.7k
C678 47p
R684 1.8k
Q672
R697 1k
C673
R687 2.2k
R685 1k
S671 FOCUS
L671
L672
S672 WHITE BAL
C675 33p
MANU
AUTO
CT671
OUT DOOR
IN DOOR
AUTO
RV671
IRIS
OPEN
CLOSE
C671
Q671
S673 SENS
HIGH
NORM
CN672
CN671
1-620-148-
13

G-1 BOARD (SOLDER SIDE) no mark : CAMERA POWER SW ON mode


IC673
R674
R675
R676
R677
R678
R679
R680
R681
R682
R686
R671
R672
C677
IC677
IC678
IC672
IC671
C676
W672
21
15
10
5
1
I-620-148-
13


CG-1 BOARD no mark : CAMERA POWER SW ON mode
W672
SS 5V
CAM POWER SW
SENS HI
LLA
OUTDOOR
INDOOR
EE CONT
W B
W G
W R
STB 2
STB 1
SCK
SO
WIPER
FADER
AF ON
VD
HD
GND
F5V
L671 10μH
C674 0.01
C673 4.7 10V
C679 100p
R690 10k
IC675
μPD6105G
CHARACTOR GENERATOR
IC676
μPD6105G
CHARACTOR GENERATOR
R683 4.7k
C678 47p
R689 10k
L672 56μH
CT671 30p
C675 33p
IC671
μPD74HC02G
BLANKING LOGIC
IC672
μPD74HC157G
CHARACTOR/WIPER SW
IC673
μPD74HC04G
R.G.B INVERT
R673 0
R699 0
R672 100k
R671
R687 2.2k
R686 1k
R688 1.2k
R674 180
R679 1.2k
R676 10k
R675 1.6k
R678 1.8k
R677 3.6k
Q671
DTA144EK
SENS HI SW
Q672
2SC1623
FADER BUFFER
C671 22 6.3V
C676 0.1
R684 1.8k
R697 1k
CN671 (BLK)
GND
SENS HI
BLK
SIC BLK
INDOOR
OUTDOOR
SI R-Y
SI B-Y
LLA
WHT
GRY
TO ME-4 BOARD W703
(See Page 121)
W671
EVF OUT
GND
TO EM-1 BOARD CN902
(WHT)
(See Page 185)
S671 FOCUS
MANU
AUTO
S672 WHITE BALANCE
OUT DOOR
IN DOOR
AUTO
RV671 IRIS
10k
S673 SENS
HIGH
NORM
S674 CAMERA POWER SW
ON
IC677
μPD74HC174G
SIY, S̄ DELAY
IC678
μPD74HC174G
R.B DELAY
R681 1.8k
R685 1k
C677 0.01
R682 4.7k
R680 3.6k
CN672
WHT FD
SIY
SI Y BLK
EVF OUT
GND
VD
HD
TO CP-18 BOARD W703
(See Page 118)
GND
CHASSIS GND

TI-8 BOARD (Last two digits 14) CAMERA (3)

- As to parts to be replaced, refer to the Electrical parts list.

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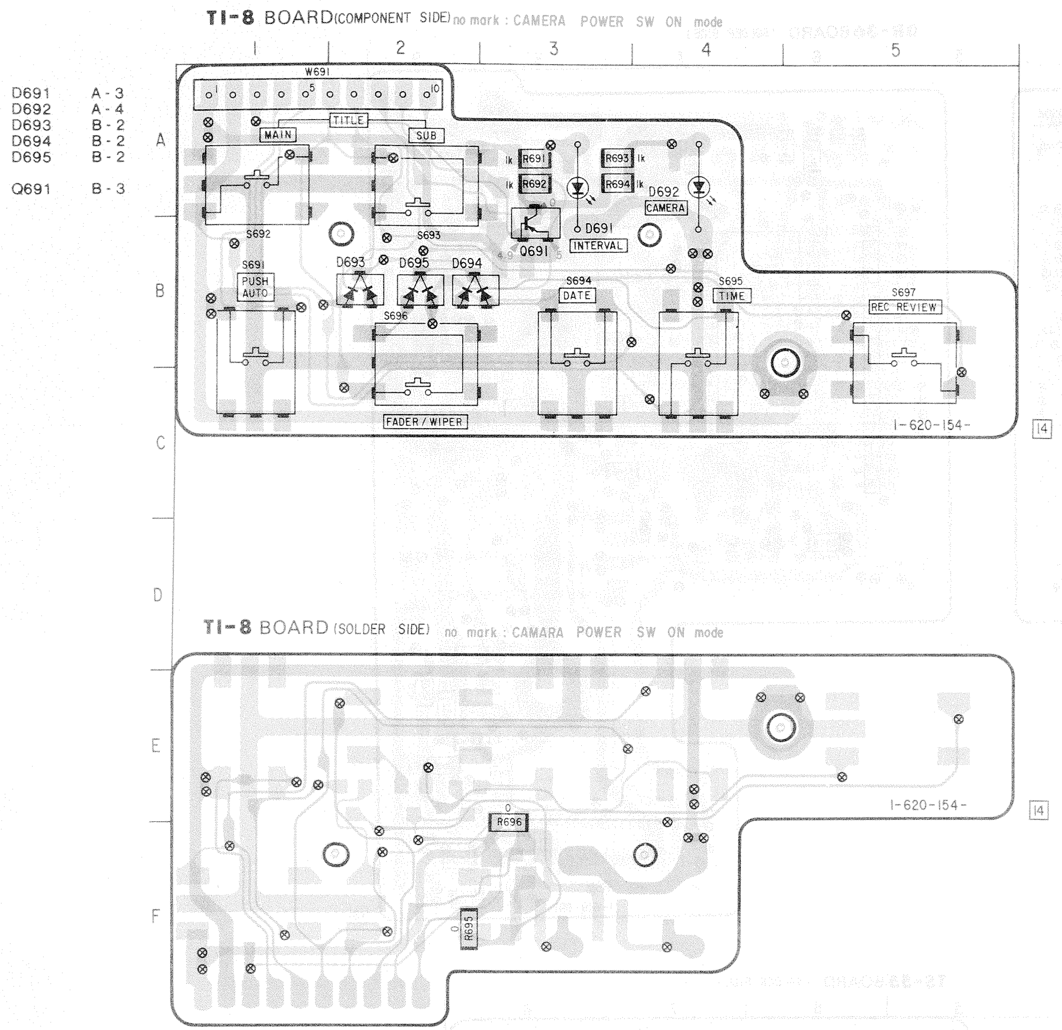
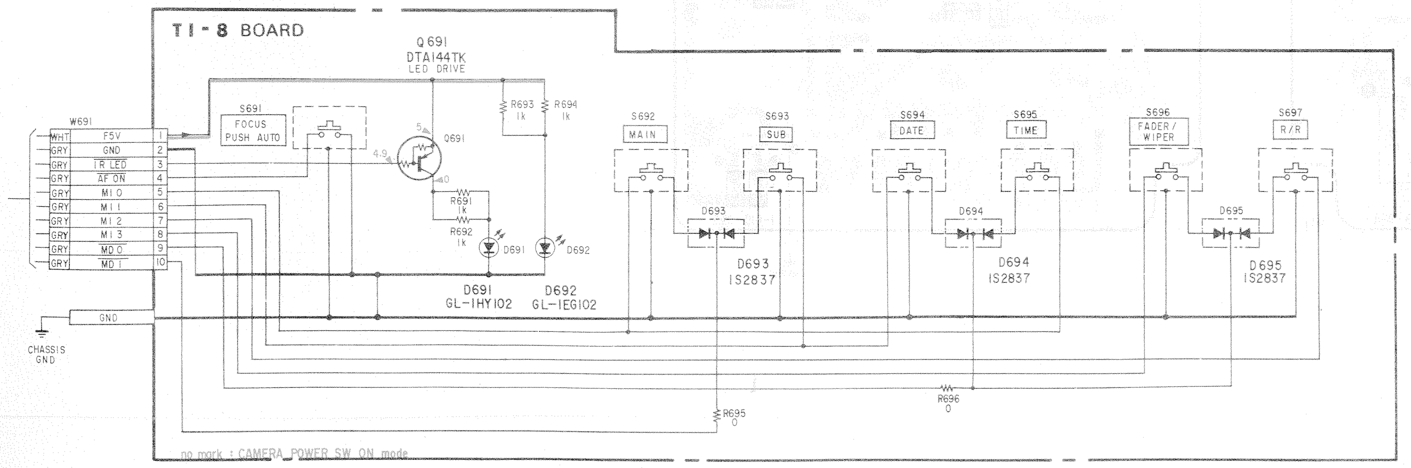

TI-8 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode
D691 A-3
D692 A-4
D693 B-2
D694 B-2
D695 B-2
Q691 B-3
W691
TITLE
MAIN
SUB
S691 PUSH AUTO
S692
S693
S694 DATE
S695 TIME
S696 FADER/WIPER
S697 REC REVIEW
D691 INTERVAL
D692 CAMERA
Q691
R691
R692
R693
R694
1-620-154-
14
TI-8 BOARD (SOLDER SIDE) no mark : CAMARA POWER SW ON mode
R696
R695
1-620-154-
14

Page 137


TI-8 BOARD
Q691 DTA144TK LED DRIVE
W691
F5V
GND
TR LED
AF ON
MI 0
MI 1
MI 2
MI 3
MO 0
MO 1
CHASSIS GND
S691 FOCUS PUSH AUTO
S692 MAIN
S693 SUB
S694 DATE
S695 TIME
S696 FADER/WIPER
S697 R/R
R693 1k
R694 1k
R691 1k
R692 1k
D691 GL-1HY102
D692 GL-1EG102
D693 1S2837
D694 1S2837
D695 1S2837
R695 0
R696 0
no mark : CAMERA POWER SW ON mode

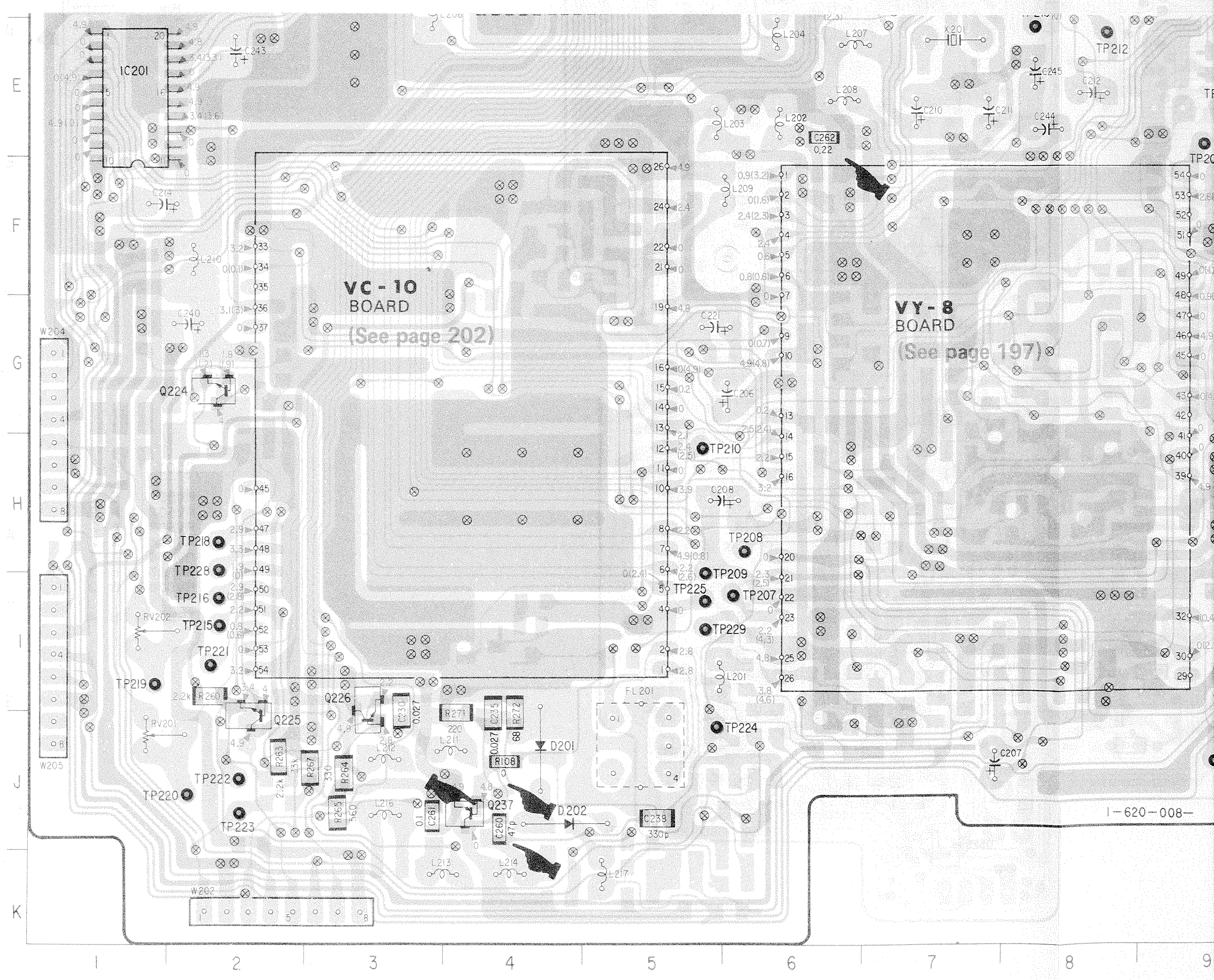
VI-21 BOARD (Last two digits 13) VIDEO

- Parts to be replaced

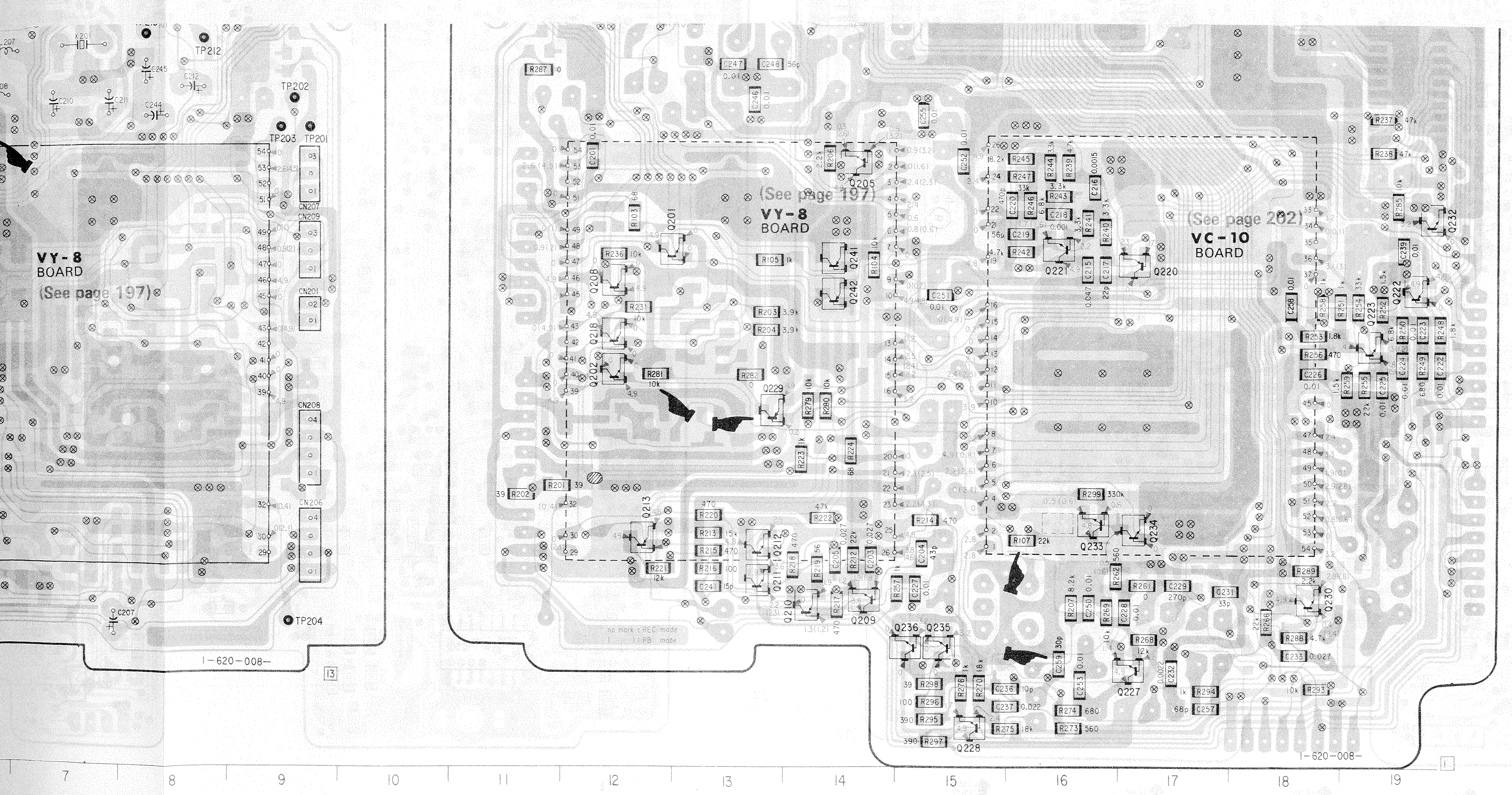
Ref. No.	Old	New
C259	1-163-105-00 CERAMIC CHIP 33PF 5% 50V	1-163-104-00 CERAMIC CHIP 30PF 5% 50V
C260	1-163-141-00 CERAMIC CHIP 0.001MF 5% 50V	1-163-109-00 CERAMIC CHIP 47PF 5% 50V
C262	1-163-038-00 CERAMIC CHIP 0.1MF 25V	1-163-081-00 CERAMIC CHIP 0.22MF 25V
Q229	8-729-900-99 TRANSISTOR DTA144WK	8-729-903-38 TRANSISTOR DTA144TK
R107	1-247-863-00 CARBON 22K 5% 1/6W	1-216-081-00 METAL CHIP 22K 5% 1/10W
R108	———	1-216-295-00 METAL CHIP 0 5% 1/10W
R281	1-216-065-00 METAL CHIP 4.7K 5% 1/10W	1-216-073-00 METAL CHIP 10K 5% 1/10W

Page 148

☛ : Replaced


IC201
VC-10 BOARD (See page 202)
VY-8 BOARD (See page 197)
TP210
TP208
TP209
TP225
TP207
TP229
TP218
TP228
TP216
TP215
TP221
TP219
TP224
TP222
TP220
TP223
TP212
Q224
Q225
Q226
Q237
D201
D202
C262
R108
1-620-008-

New		
ERAMIC CHIP 30PF	5%	50V
ERAMIC CHIP 47PF	5%	50V
ERAMIC CHIP 0.22MF		25V
RANSISTOR DTA144TK		
ETAL CHIP 22K	5%	1/10W
ETAL CHIP 0	5%	1/10W
ETAL CHIP 10K	5%	1/10W



VY-8
BOARD
(See page 197)
VY-8
BOARD
(See page 197)
VC-10
BOARD
(See page 202)
TP201
TP202
TP203
TP204
TP212
CN201
CN206
CN208
CN209
1-620-008-
13
1-620-008-
7
8
9
10
11
12
13
14
15
16
17
18
19

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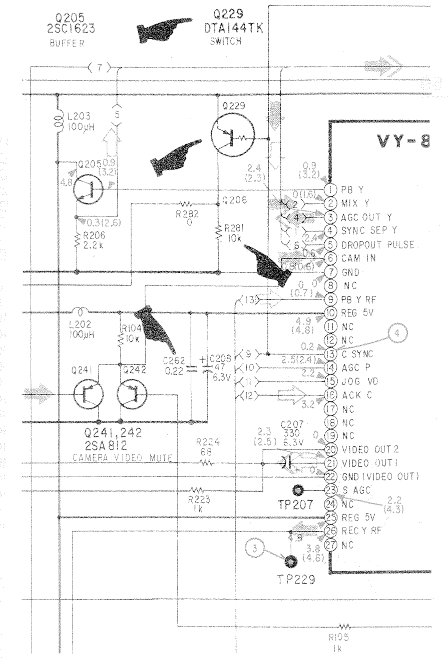

Q205
2SC1623
BUFFER
Q229
DTA144TK
SWITCH
L203
100μH
R206
2.2k
R282
0
R281
10k
Q206
L202
100μH
R104
10k
C262
0.22
C208
47
6.3V
Q241
Q242
Q241,242
2SA812
CAMERA VIDEO MUTE
R224
68
R223
1k
C207
330
6.3V
TP207
TP229
R105
1k
VY-8
PB Y
MIX Y
AGC OUT Y
SYNC SEP Y
DROPOUT PULSE
CAM IN
GND
NC
PB Y RF
REG 5V
NC
NC
C SYNC
AGC P
JOG VD
ACK C
NC
NC
NC
VIDEO OUT 2
VIDEO OUT 1
GND (VIDEO OUT)
S AGC
NC
REG 5V
REC Y RF
NC

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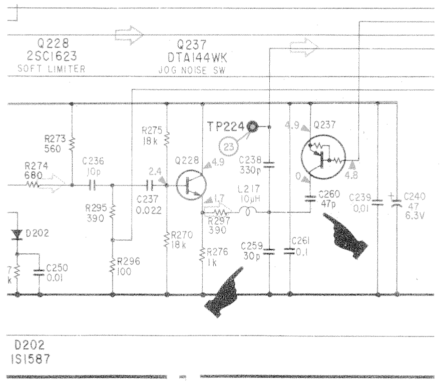

Q228
2SC1623
SOFT LIMITER
Q237
DTA144WK
JOG NOISE SW
TP224
R273
560
R274
680
C236
10p
C237
0.022
R295
390
R296
100
R275
18k
R270
18k
R276
1k
R297
390
L217
10μH
C238
330p
C259
30p
C261
0.1
C260
47p
C239
0.01
C240
47
6.3V
C250
0.01
D202
D202
1S1587

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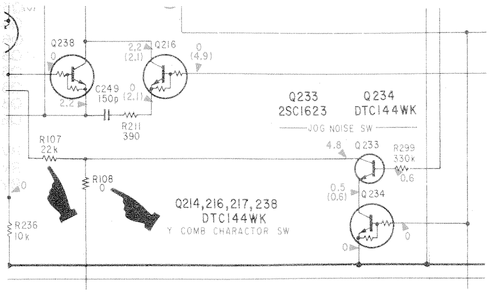


Q238
Q216
C249
150p
R211
390
R107
22k
R108
0
R236
10k
Q233
2SC1623
Q234
DTC144WK
JOG NOISE SW
R299
330k
Q214,216,217,238
DTC144WK
Y COMB CHARACTOR SW

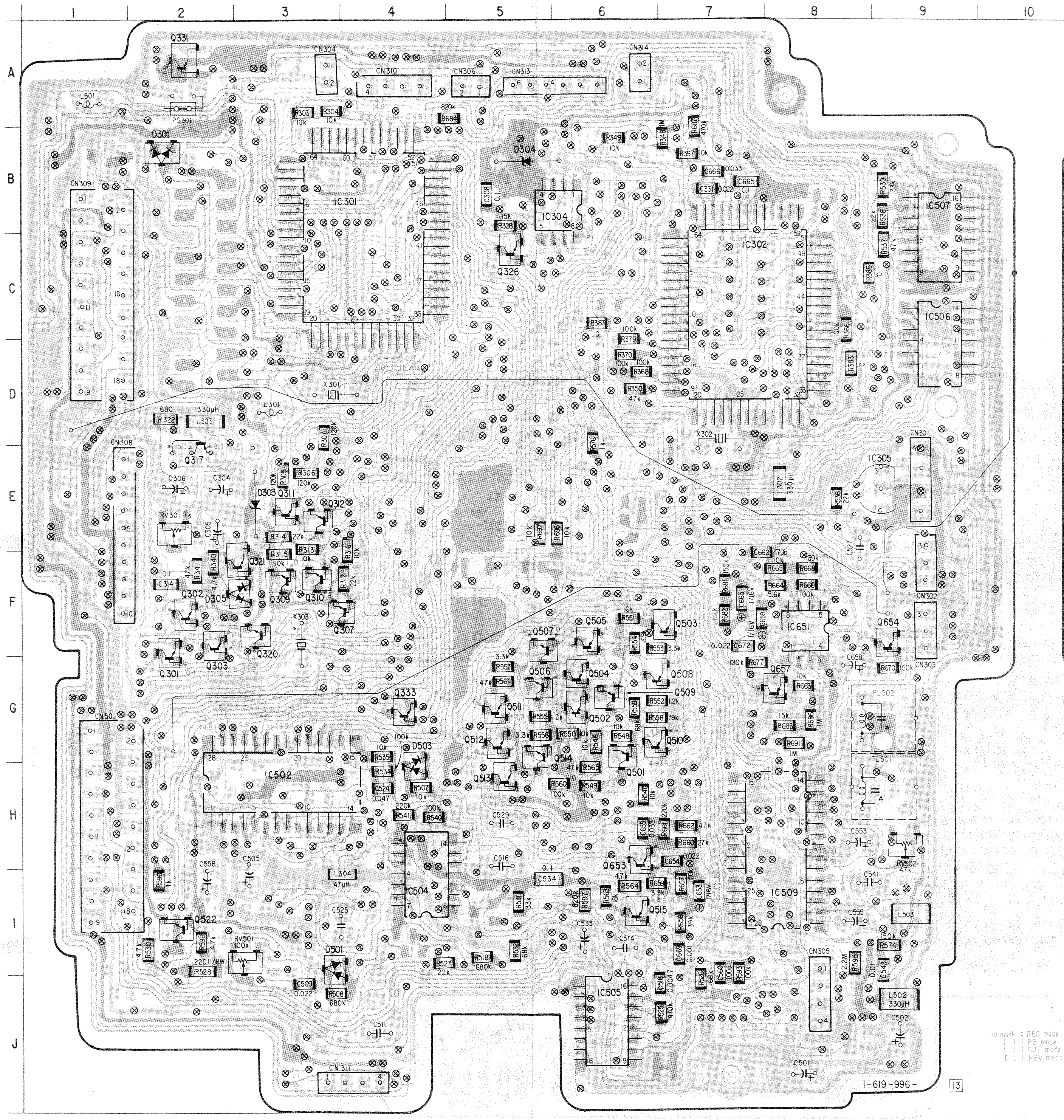
SS-64, DR-36, TS-55 BOARDS (Last two digits $\boxed{13}$) $\boxed{\text{SERVO, SYSTEM CONTROL}}$

- As to be replaced, refer to the Electrical parts list.

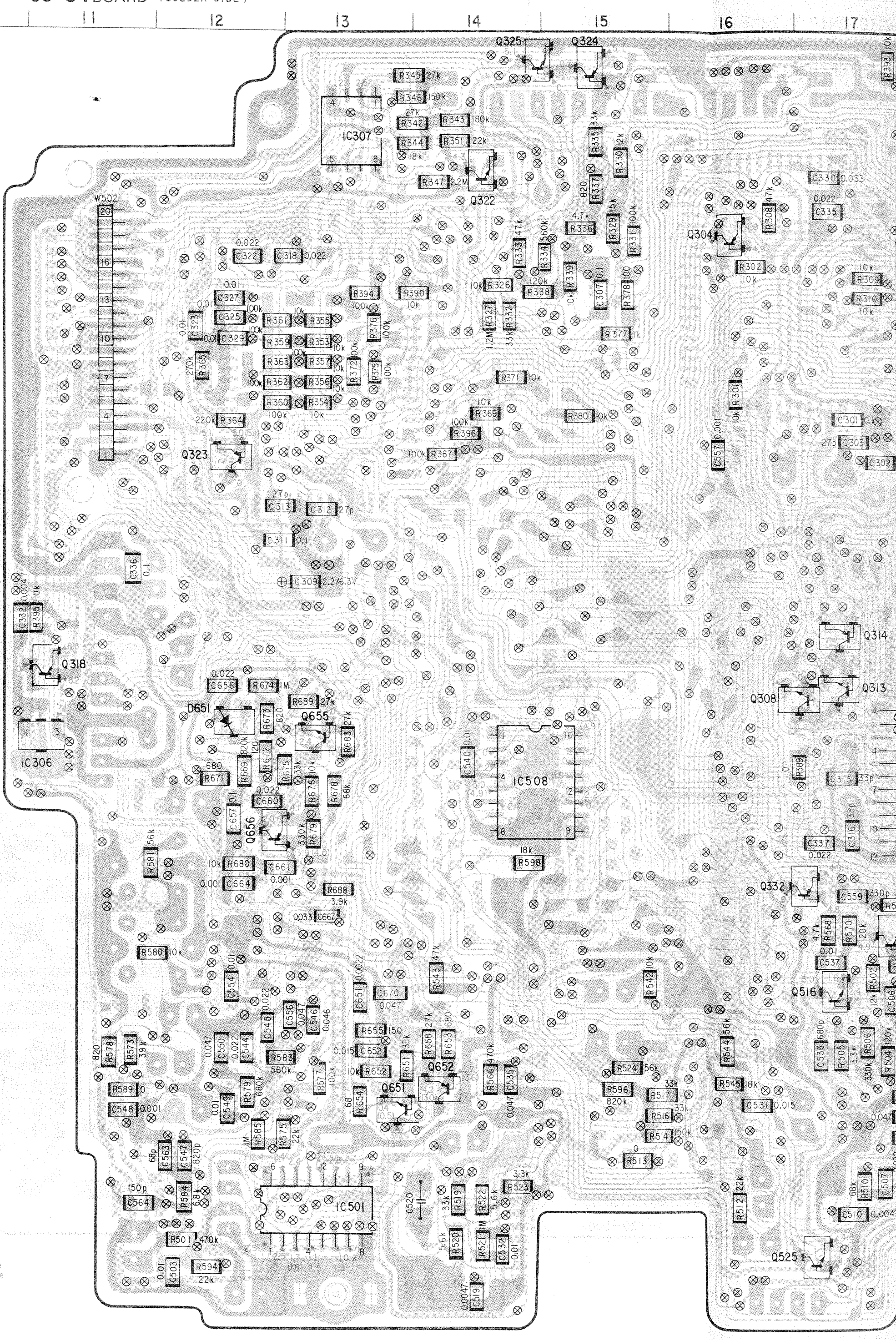
Page 159

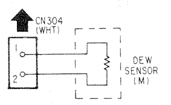
D301	B - 2
D303	E - 3
D304	B - 5
D305	F - 3
D501	I - 3
D503	H - 4
D505	I - 18
D651	F - 12
IC301	B - 4
IC302	C - 7
IC303	F - 18
IC304	B - 6
IC305	E - 9
IC306	F - 11
IC307	A - 13
IC501	J - 13
IC502	H - 3
IC504	I - 4
IC505	J - 6
IC506	C - 9
IC507	B - 9
IC508	F - 14
IC509	I - 8
IC651	F - 8
Q301	G - 2
Q302	F - 2
Q303	G - 2
Q304	B - 16
Q305	F - 19
Q306	H - 18
Q307	F - 4
Q308	F - 16
Q309	F - 3
Q310	F - 3
Q311	E - 3
Q312	E - 3
Q313	F - 17
Q314	E - 17
Q315	E - 18
Q316	E - 19
Q317	E - 2
Q318	E - 11
Q319	C - 19
Q320	F - 3
Q321	F - 3
Q322	B - 14
Q323	D - 12
Q324	A - 15
Q325	A - 14
Q326	C - 5
Q329	A - 18
Q331	A - 2
Q332	G - 16
Q333	G - 4
Q501	G - 6
Q502	G - 6
Q503	F - 7
Q504	G - 6
Q505	F - 6
Q506	G - 5
Q507	F - 5
Q508	G - 7
Q509	G - 6
Q510	G - 7
Q511	G - 5
Q512	G - 5
Q513	H - 5
Q514	H - 5
Q515	I - 6
Q516	H - 17
Q517	G - 18
Q518	H - 17
Q519	H - 18
Q520	J - 18
Q521	I - 18
Q522	I - 2
Q523	I - 18
Q524	J - 17
Q525	J - 17
Q651	I - 13
Q652	I - 14
Q653	H - 6
Q654	F - 9
Q655	F - 13
Q656	G - 12
Q657	G - 8
RV301	E - 2
RV501	I - 3
RV502	H - 9

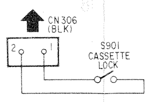
SS-64 BOARD (COMPONENT SIDE)

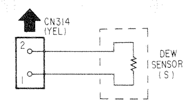

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
1-619-996-
13
no mark : REC mode
( ) : PB mode
⟨ ⟩ : CUE mode
[ ] : REV mode

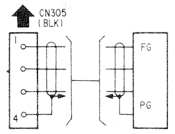
SS-64 BOARD (SOLDER SIDE)

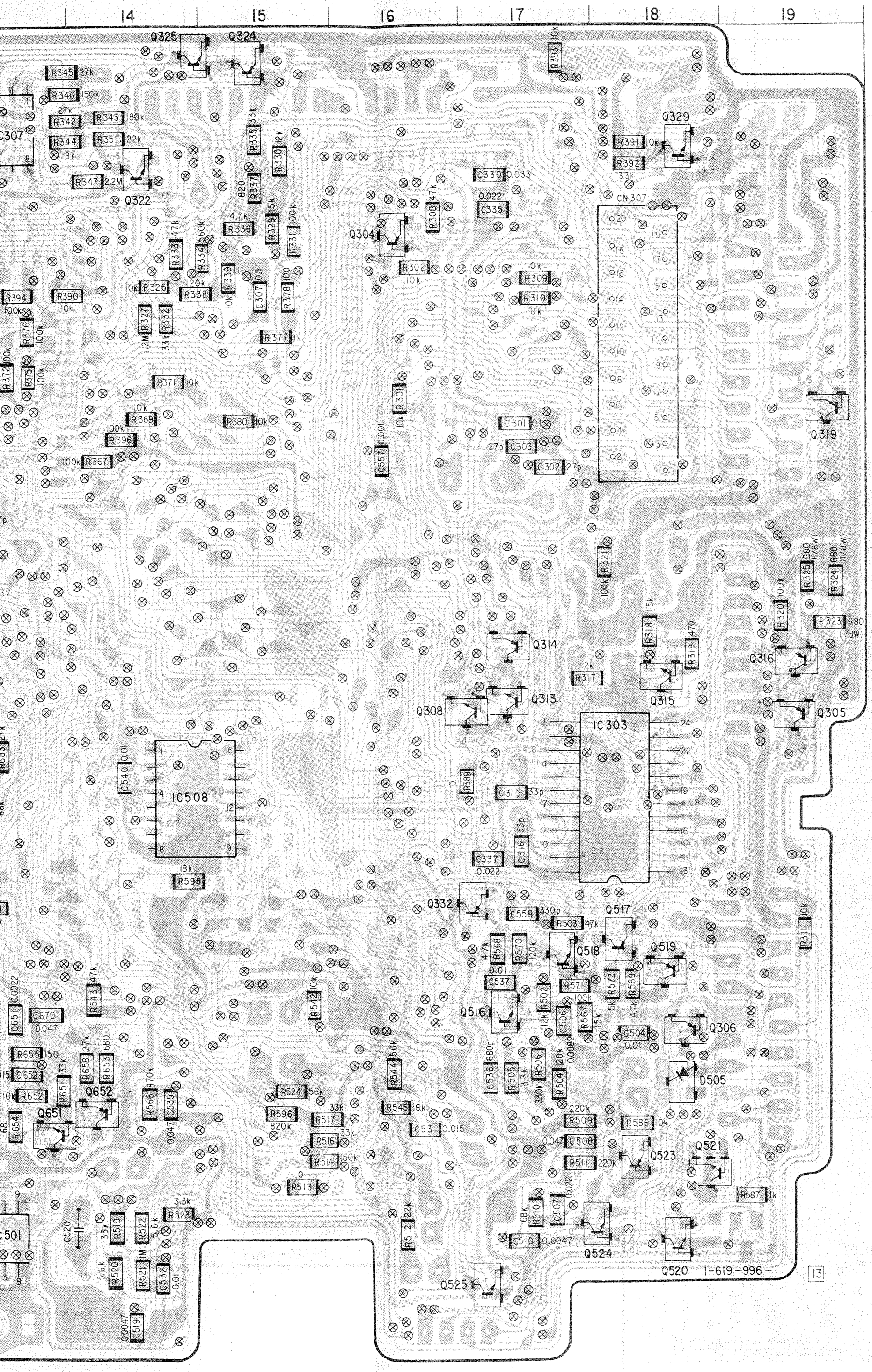

11
12
13
14
15
16
17


CN304
(WHT)
1
2
DEW
SENSOR
(M)

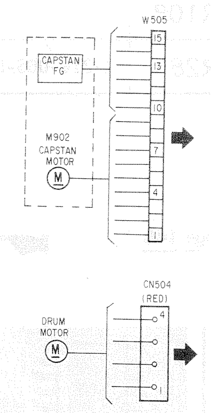

CN306
(BLK)
2
1
S901
CASSETTE
LOCK


CN314
(YEL)
2
1
DEW
SENSOR
(S)

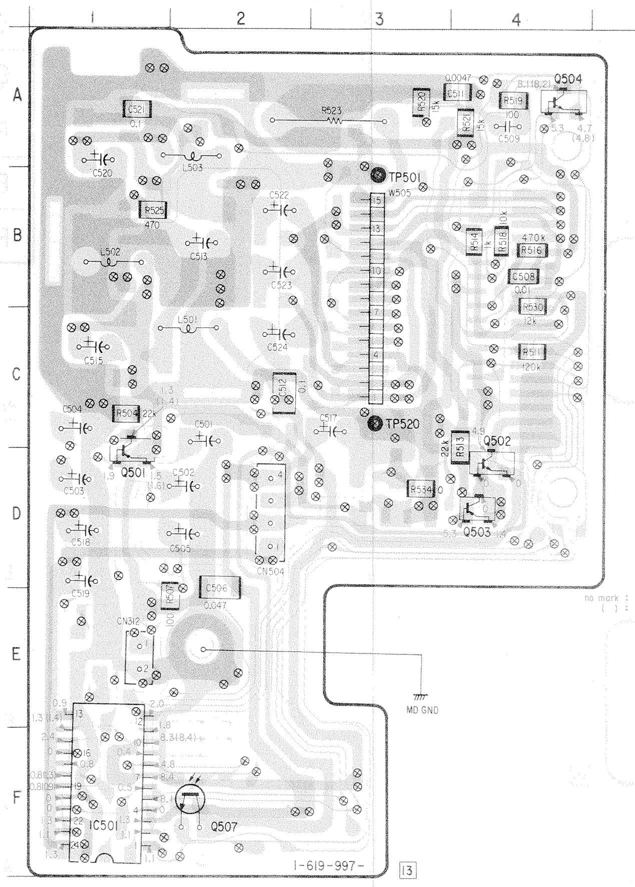

CN305
(BLK)
1
4
FG
PG


I4
I5
I6
I7
I8
I9
IC508
IC303
CN307
Q322
Q324
Q325
Q329
Q304
Q319
Q314
Q313
Q308
Q315
Q316
Q305
Q332
Q517
Q518
Q519
Q516
Q306
Q505
Q523
Q521
Q524
Q520
Q525
Q651
Q652
1-619-996-
13

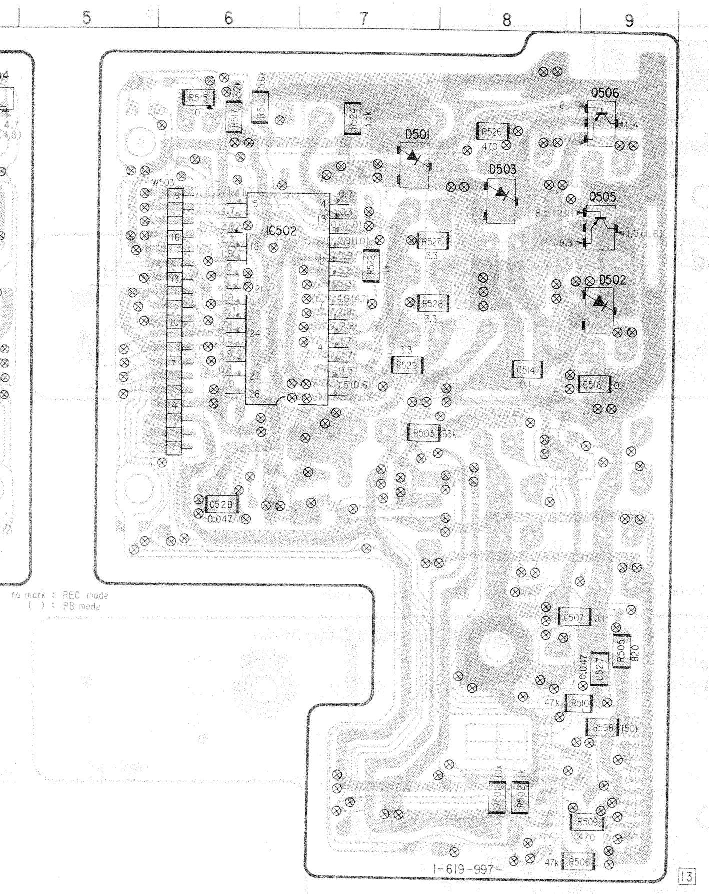
D501	A - 7
D502	B - 9
D503	B - 8
IC501	F - 1
IC502	B - 6
Q501	D - 1
Q502	D - 4
Q503	D - 4
Q504	A - 4
Q505	B - 9
Q506	A - 9
Q507	F - 2
TP501	B - 3
TP520	C - 3


W505
CAPSTAN FG
M902
CAPSTAN MOTOR
M
CN504
(RED)
DRUM MOTOR
M

DR-36 BOARD (COMPONENT SIDE)

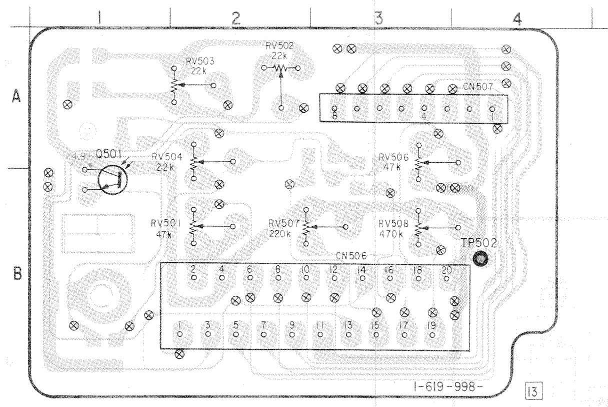

1
2
3
4
A
B
C
D
E
F
Q504
TP501
TP520
Q501
Q502
Q503
IC501
Q507
MD GND
1-619-997-
13

DR-36 BOARD (SOLDER SIDE)

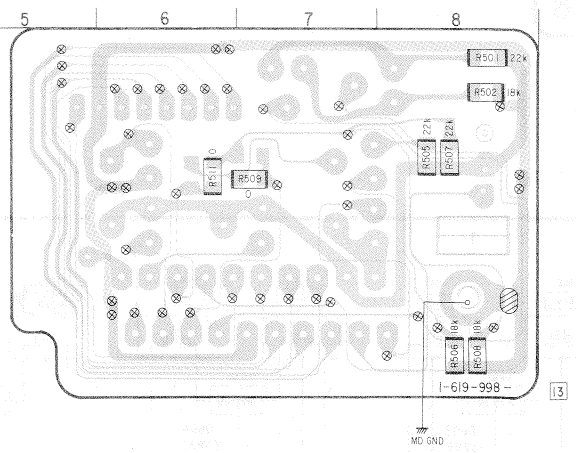

5
6
7
8
9
Q506
D501
D503
Q505
D502
IC502
no mark : REC mode
( ) : PB mode
1-619-997-
13

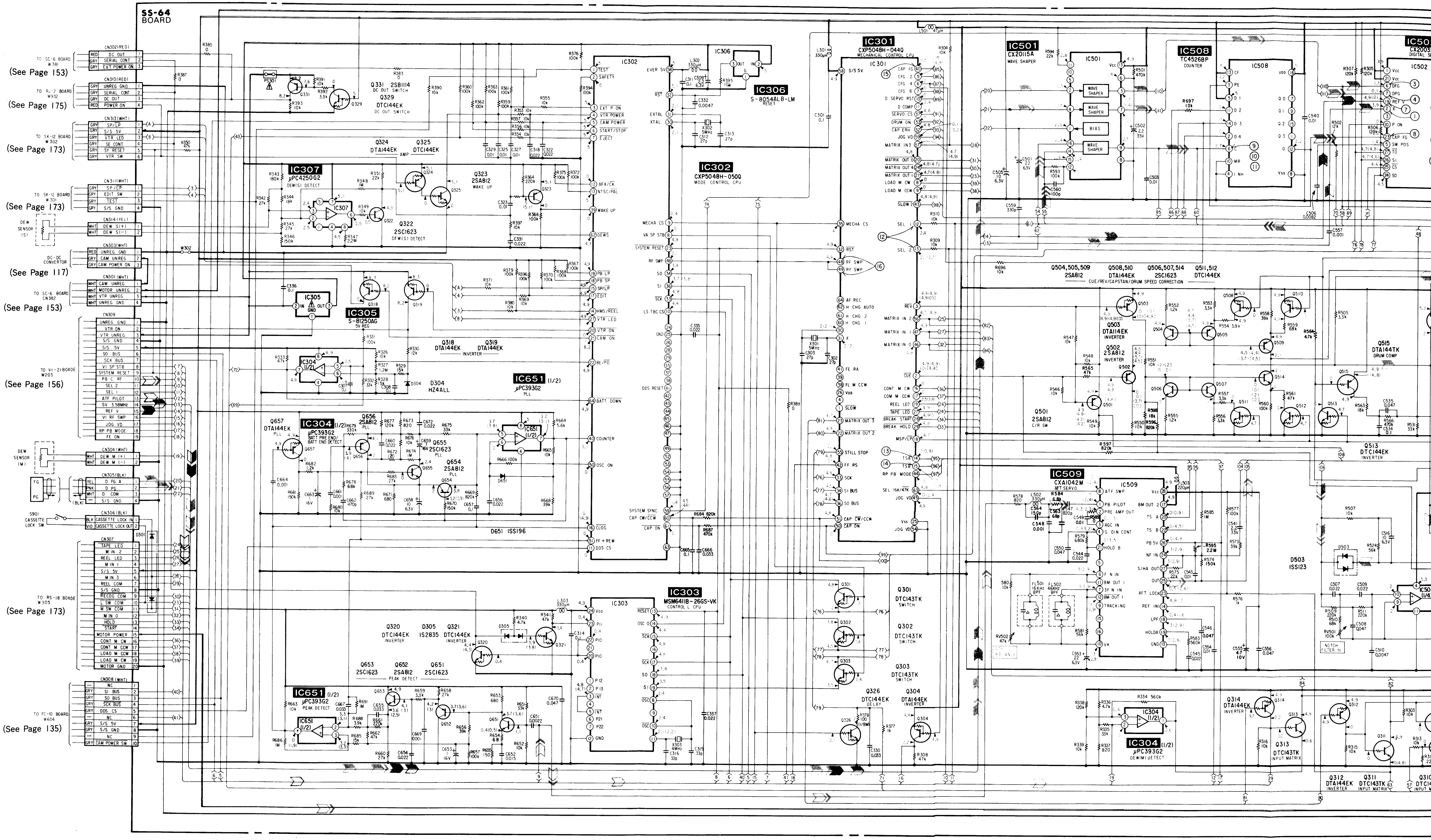
Q501	B - 1
RV501	B - 2
RV502	A - 2
RV503	A - 2
RV504	A - 2
RV506	A - 3
RV507	B - 2
RV508	B - 3
TP502	B - 4

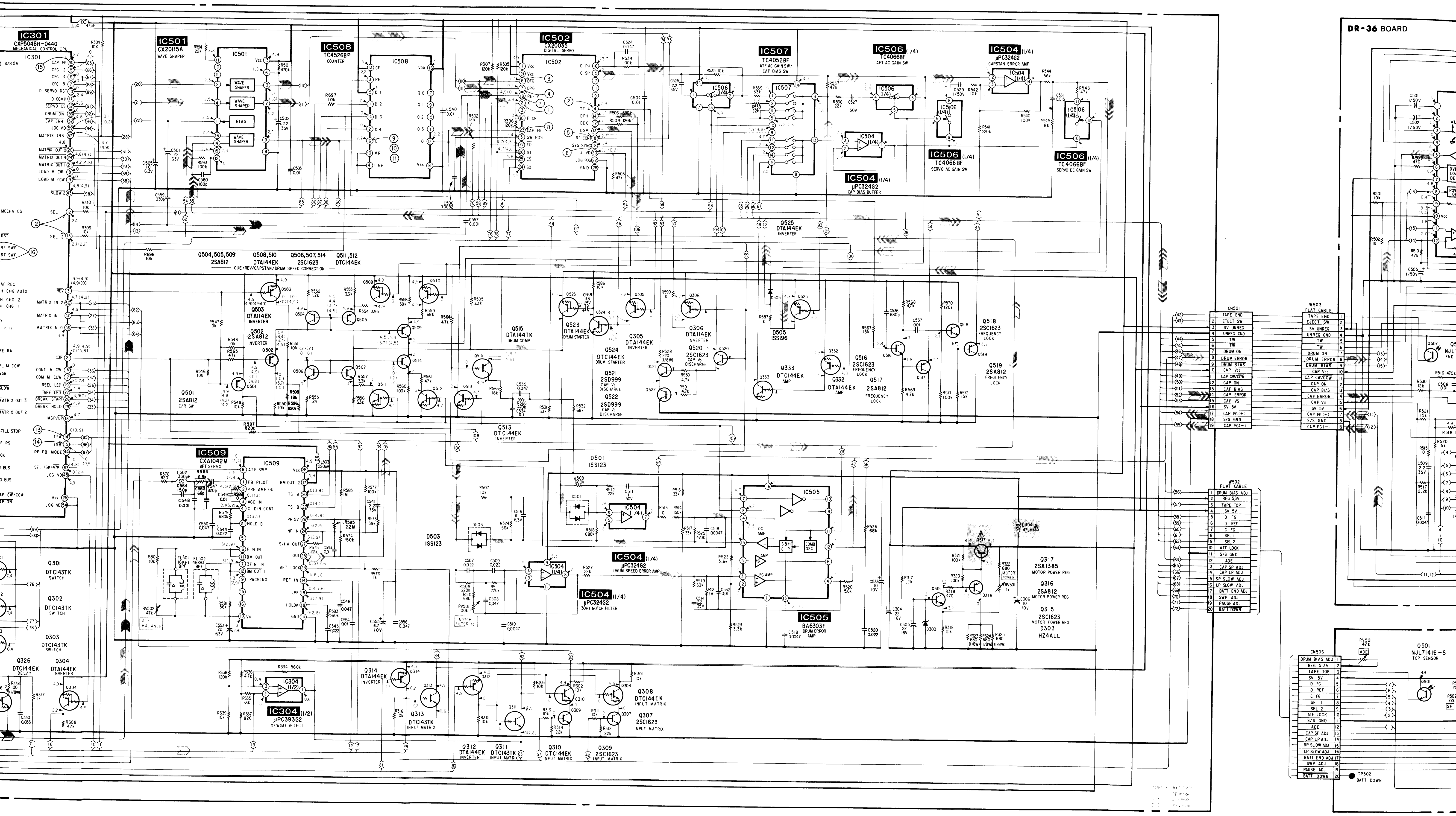
TS-55 BOARD (COMPONENT SIDE)

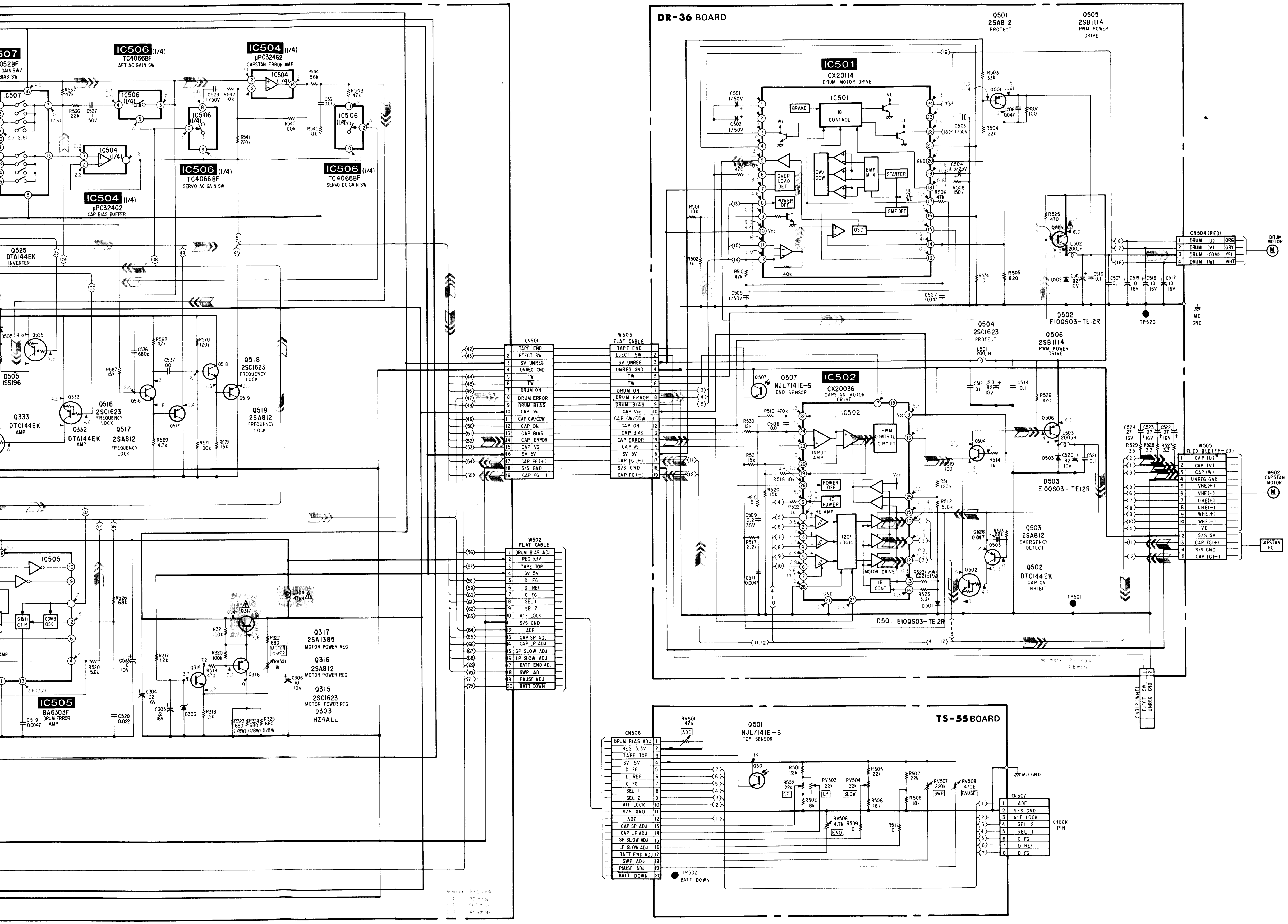

1
2
3
4
A
B
RV503
22k
RV502
22k
CN507
Q501
RV504
22k
RV506
47k
RV501
47k
RV507
220k
RV508
470k
TP502
CN506
1-619-998-
13

TS-55 BOARD (SOLDER SIDE)


5
6
7
8
R501
22k
R502
18k
R509
R511
R505
22k
R507
22k
R506
18k
R508
MD GND
1-619-998-
13


SS-64 BOARD
TO SC-6 BOARD W381
(See Page 153)
TO RJ-2 BOARD W932
(See Page 175)
TO SK-12 BOARD W302
(See Page 173)
TO SK-12 BOARD W301
(See Page 173)
DEW SENSOR (S)
DC-DC CONVERTOR
(See Page 117)
TO SC-6 BOARD CN382
(See Page 153)
TO VI-21 BOARD W203
(See Page 156)
DEW SENSOR (M)
S901 CASSETTE LOCK SW
TO RS-18 BOARD W305
(See Page 173)
TO FC-10 BOARD W604
(See Page 135)
CN302(RED)
CN310(RED)
CN313(WHT)
CN311(WHT)
CN314(YEL)
CN303(WHT)
CN301(WHT)
CN309
CN304(WHT)
CN305(BLK)
CN306(BLK)
CN307
CN308(WHT)
IC302
IC306
S-8054ALB-LM
RESET
IC301
CXP5048H-044Q
MECHANICAL CONTROL CPU
IC302
CXP5048H-050Q
MODE CONTROL CPU
IC307
μPC4250G2
DEW(S) DETECT
Q331 2SB1114
DC OUT SWITCH
Q329
DTC144EK
DC OUT SWITCH
Q324 DTA144EK
Q325 DTC144EK
AMP
Q323
2SA812
WAKE UP
Q322
2SC1623
DEW(S) DETECT
IC305
S-81250AG
5V REG
Q318 DTA144EK
Q319 DTA144EK
INVERTER
D304
HZ4ALL
IC651 (1/2)
μPC393G2
PLL
IC304 (1/2)
μPC393G2
BATT PRE END/
BATT END DETECT
Q657
DTA144EK
PLL
Q656
2SA812
PLL
Q655
2SC1623
PLL
Q654
2SA812
PLL
D651 1SS196
IC303
MSM6411B-26GS-VK
CONTROL L CPU
Q320
DTC144EK
INVERTER
D305
1S2835
Q321
DTC144EK
INVERTER
Q653 2SC1623
Q652 2SA812
Q651 2SC1623
PEAK DETECT
IC651 (1/2)
μPC393G2
PEAK DETECT
Q301
DTC143TK
SWITCH
Q302
DTC143TK
SWITCH
Q303
DTC143TK
SWITCH
Q326
DTC144EK
DELAY
Q304
DTA144EK
INVERTER
IC501
CX20115A
WAVE SHAPER
IC501
WAVE SHAPER
BIAS
IC508
TC4526BP
COUNTER
IC502
CX20034
DIGITAL SERVO
Q504,505,509 2SA812
Q508,510 DTA144EK
Q506,507,514 2SC1623
Q511,512 DTC144EK
CUE/REV/CAPSTAN/DRUM SPEED CORRECTION
Q503
DTA114EK
INVERTER
Q502
2SA812
INVERTER
Q501
2SA812
C/R SW
Q515
DTA144TK
DRUM COMP
Q513
DTC144EK
INVERTER
IC509
CXA1042M
AFT SERVO
D503
1SS123
IC304 (1/2)
μPC393G2
DEW(M) DETECT
Q314
DTA144EK
INVERTER
Q313
DTC143TK
INPUT MATRIX
Q312
DTA144EK
INVERTER
Q311
DTC143TK
INPUT MATRIX


IC301
CXP5048H-044Q
MECHANICAL CONTROL CPU
IC501
CX20115A
WAVE SHAPER
IC508
TC4526BP
COUNTER
IC502
CX20035
DIGITAL SERVO
IC507
TC4052BF
ATF AC GAIN SW/CAP BIAS SW
IC506 (1/4)
TC4066BF
AFT AC GAIN SW
IC504 (1/4)
μPC324G2
CAPSTAN ERROR AMP
IC506 (1/4)
TC4066BF
SERVO AC GAIN SW
IC506 (1/4)
TC4066BF
SERVO DC GAIN SW
IC504 (1/4)
μPC324G2
CAP BIAS BUFFER
DR-36 BOARD
Q504,505,509
2SA812
Q508,510
DTA144EK
Q506,507,514
2SC1623
Q511,512
DTC144EK
CUE/REV/CAPSTAN/DRUM SPEED CORRECTION
Q503
DTA114EK
INVERTER
Q502
2SA812
INVERTER
Q501
2SA812
C/R SW
Q515
DTA144TK
DRUM COMP
Q513
DTC144EK
INVERTER
Q523
DTA144EK
DRUM STARTER
Q524
DTC144EK
DRUM STARTER
Q305
DTA144EK
INVERTER
Q521
2SD999
CAP Vs DISCHARGE
Q522
2SD999
CAP Vs DISCHARGE
Q306
DTA114EK
INVERTER
Q520
2SC1623
CAP Vs DISCHARGE
Q525
DTA144EK
INVERTER
D505
1SS196
Q333
DTC144EK
AMP
Q332
DTA144EK
AMP
Q516
2SC1623
FREQUENCY LOCK
Q517
2SA812
FREQUENCY LOCK
Q518
2SC1623
FREQUENCY LOCK
Q519
2SA812
FREQUENCY LOCK
IC509
CXA1042M
AFT SERVO
D501
1SS123
D503
1SS123
IC504 (1/4)
μPC324G2
DRUM SPEED ERROR AMP
IC504 (1/4)
μPC324G2
30Hz NOTCH FILTER
IC505
BA6303F
DRUM ERROR AMP
Q317
2SA1385
MOTOR POWER REG
Q316
2SA812
MOTOR POWER REG
Q315
2SC1623
MOTOR POWER REG
D303
HZ4ALL
Q301
DTC143TK
SWITCH
Q302
DTC143TK
SWITCH
Q303
DTC143TK
SWITCH
Q326
DTC144EK
DELAY
Q304
DTA144EK
INVERTER
IC304 (1/2)
μPC393G2
DEW(MI) DETECT
Q314
DTA144EK
INVERTER
Q313
DTC143TK
INPUT MATRIX
Q312
DTA144EK
INVERTER
Q311
DTC143TK
INPUT MATRIX
Q310
DTC144EK
INPUT MATRIX
Q309
2SC1623
INPUT MATRIX
Q308
DTC144EK
INPUT MATRIX
Q307
2SC1623
INPUT MATRIX
CN501
W503
FLAT CABLE
TAPE END
EJECT SW
SV UNREG
UNREG GND
TW
TW
DRUM ON
DRUM ERROR
DRUM BIAS
CAP Vcc
CAP CW/CCW
CAP ON
CAP BIAS
CAP ERROR
CAP VS
SV 5V
CAP FG(+)
S/S GND
CAP FG(−)
W502
FLAT CABLE
DRUM BIAS ADJ
REG 5.3V
TAPE TOP
SV 5V
D FG
D REF
C FG
SEL 1
SEL 2
ATF LOCK
S/S GND
ADE
CAP SP ADJ
CAP LP ADJ
SP SLOW ADJ
LP SLOW ADJ
BATT END ADJ
SWP ADJ
PAUSE ADJ
BATT DOWN
CN506
RV501
47k
ADE
Q501
NJL7141E-S
TOP SENSOR
TP502
BATT DOWN


DR-36 BOARD
TS-55 BOARD
IC501 CX20114 DRUM MOTOR DRIVE
IC502 CX20036 CAPSTAN MOTOR DRIVE
IC504 (1/4) μPC324G2 CAPSTAN ERROR AMP
IC504 (1/4) μPC324G2 CAP BIAS BUFFER
IC506 (1/4) TC4066BF AFT AC GAIN SW
IC506 (1/4) TC4066BF SERVO AC GAIN SW
IC506 (1/4) TC4066BF SERVO DC GAIN SW
IC505 BA6303F DRUM ERROR AMP
Q501 2SA812 PROTECT
Q505 2SB1114 PWM POWER DRIVE
Q504 2SC1623 PROTECT
Q506 2SB1114 PWM POWER DRIVE
Q507 NJL7141E-S END SENSOR
Q503 2SA812 EMERGENCY DETECT
Q502 DTC144EK CAP ON INHIBIT
D502 E10QS03-TE12R
D503 E10QS03-TE12R
D501 E10QS03-TE12R
Q525 DTA144EK INVERTER
Q333 DTC144EK AMP
Q332 DTA144EK AMP
Q516 2SC1623 FREQUENCY LOCK
Q517 2SA812 FREQUENCY LOCK
Q518 2SC1623 FREQUENCY LOCK
Q519 2SA812 FREQUENCY LOCK
D505 1SS196
Q317 2SA1385 MOTOR POWER REG
Q316 2SA812 MOTOR POWER REG
Q315 2SC1623 MOTOR POWER REG
D303 HZ4ALL
Q501 NJL7141E-S TOP SENSOR
CN501
W503 FLAT CABLE
W502 FLAT CABLE
CN506
CN507
CN504 (RED)
W505 FLEXIBLE (FP-20)
M901 DRUM MOTOR
M902 CAPSTAN MOTOR
CAPSTAN FG
CHECK PIN
TP501
TP502 BATT DOWN
TP520
MD GND

Signal Path

	REC	REC/PB	PB
Drum speed servo		➤	
Drum phase servo		➤»	
Drum servo (speed and phase)		➤»»	
Capstan speed servo		➤	
Capstan phase servo	➤»		▷»
Capstan servo (speed and phase)		➤»»	
	▨	▨	

SK-12 BOARD (Last two digits 14) SERVO, MECHANISM CONTROL

- Parts to be replaced

Ref. No.	Old	New
C308	C302 1-163-021-00 CERAMIC CHIP 0.01MF 10% 50V	C308 1-163-077-00 CERAMIC CHIP 0.1MF 50V
R339	———	1-216-295-00 METAL CHIP 0 5% 1/10W

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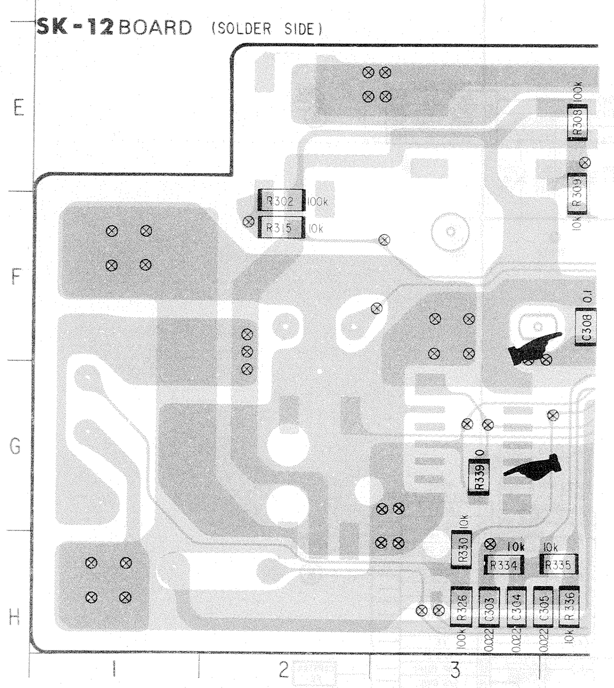
☛ : Replaced


SK-12 BOARD (SOLDER SIDE)
E
F
G
H
1
2
3
R302 100k
R315 10k
R308 100k
R309 10k
C308 0.1
R339
R330 10k
R334 10k
R335 10k
R326
C303
C304
C305
R336

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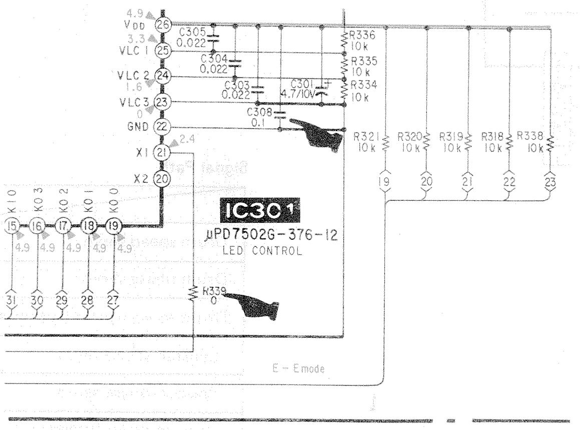
4.9
VDD 26
3.3
VLC 1 25
VLC 2 24
1.6
VLC 3 23
0
GND 22
X1 21
2.4
X2 20
C305 0.022
C304 0.022
C303 0.022
C301 4.7/10V
C308 0.1
R336 10k
R335 10k
R334 10k
R321 10k
R320 10k
R319 10k
R318 10k
R338 10k
19
20
21
22
23
KI0
KO3
KO2
KO1
KO0
15
16
17
18
19
4.9
31
30
29
28
27
IC301
μPD7502G-376-12
LED CONTROL
R339 0
E – Emode

VF-7 BOARD (Last two digits 14) ELECTRONIC VIEW FINDER

- As to parts to be replaced, refer to the Electrical parts list.

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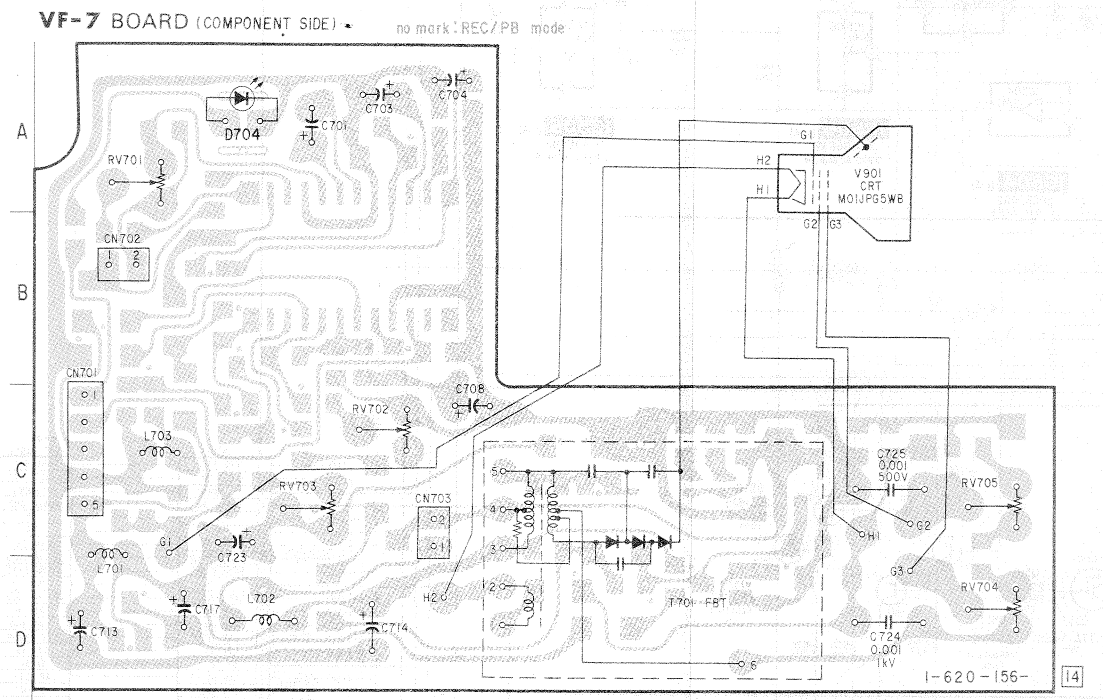
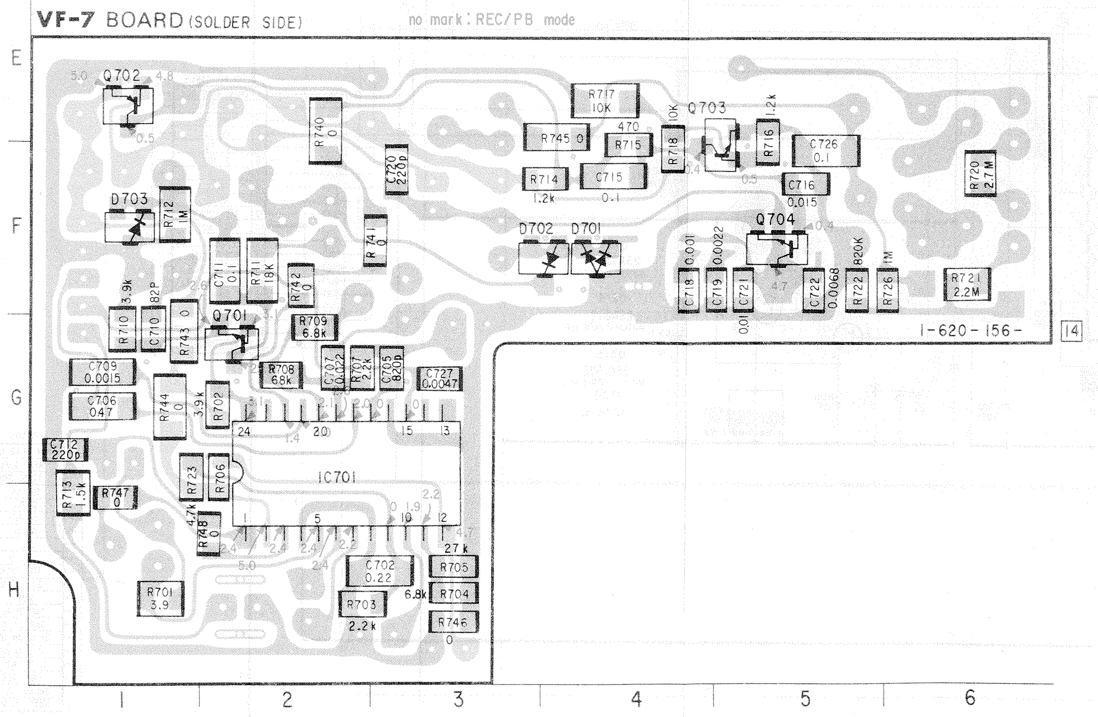
VF-7 BOARD

D701	F-4
D702	F-4
D703	F-1
D704	A-2
IC701	G-2
Q701	G-2
Q702	E-1
Q703	F-5
Q704	F-5
RV701	A-1
RV702	C-3
RV703	C-2
RV704	D-6
RV705	C-6


VF-7 BOARD (COMPONENT SIDE)
no mark : REC/PB mode
A
B
C
D
D704
C701
C703
C704
RV701
CN702
1 2
CN701
1
5
L703
C708
RV702
RV703
CN703
2
1
G1
C723
L701
C717
L702
C714
C713
H2
T701 FBT
G1
H2
H1
V901
CRT
M01JPG5WB
G2
G3
C725
0.001
500V
RV705
H1
G2
G3
RV704
C724
0.001
1kV
6
1-620-156-
14


VF-7 BOARD (SOLDER SIDE)
no mark : REC/PB mode
E
F
G
H
1
2
3
4
5
6
Q702
R740 0
C720 220p
R717 10k
R745 0
R715 470
R714 1.2k
C715 0.1
R718 10k
Q703
R716 1.2k
C726 0.1
C716 0.015
R720 2.7M
D703
R712 1M
R741 0
D702
D701
Q704
C718 0.001
C719 0.0022
C721 0.01
C722 0.0068
R722 820k
R726 1M
R721 2.2M
R710 3.9k
C710 82P
R743 0
C711 0.1
R711 18k
Q701
R742 0
R709 6.8k
R708 68k
C709 0.0015
C706 .047
R744 0
C727 0.0047
C712 220p
R713 1.5k
R747 0
R723
R706
IC701
24
20
15
13
1
5
10
12
R748 4.7k
C702 0.22
R705 27k
R704 6.8k
R703 2.2k
R746 0
R701 3.9
1-620-156-
14

) ELECTRONIC VIEW FINDER

to the Electrical parts list.

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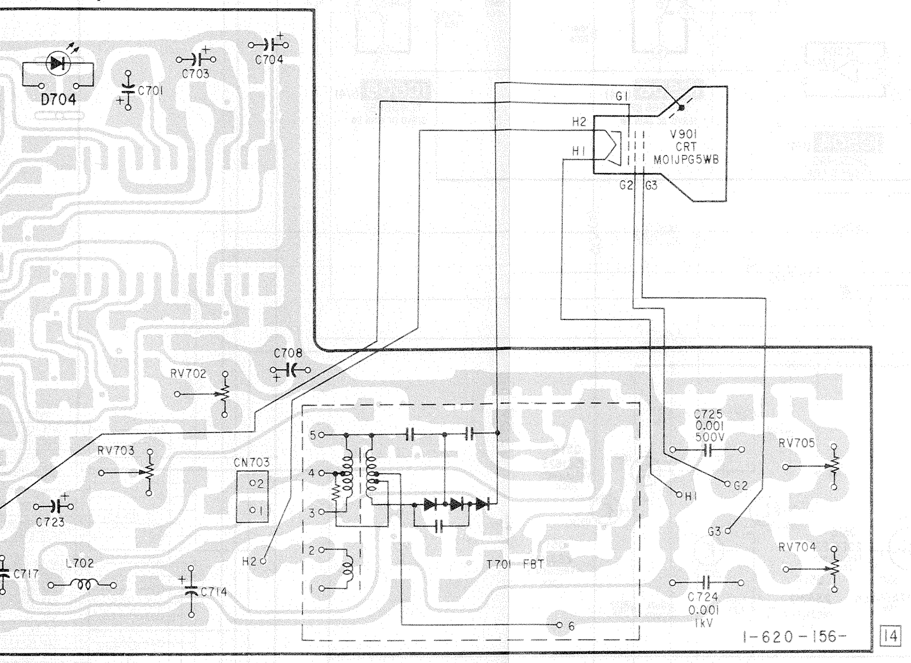
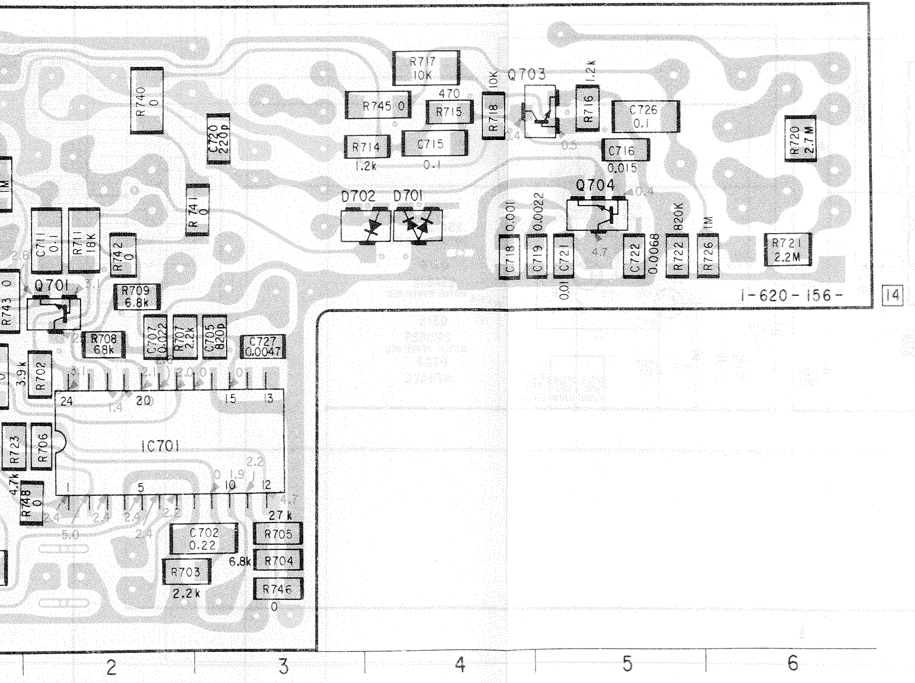
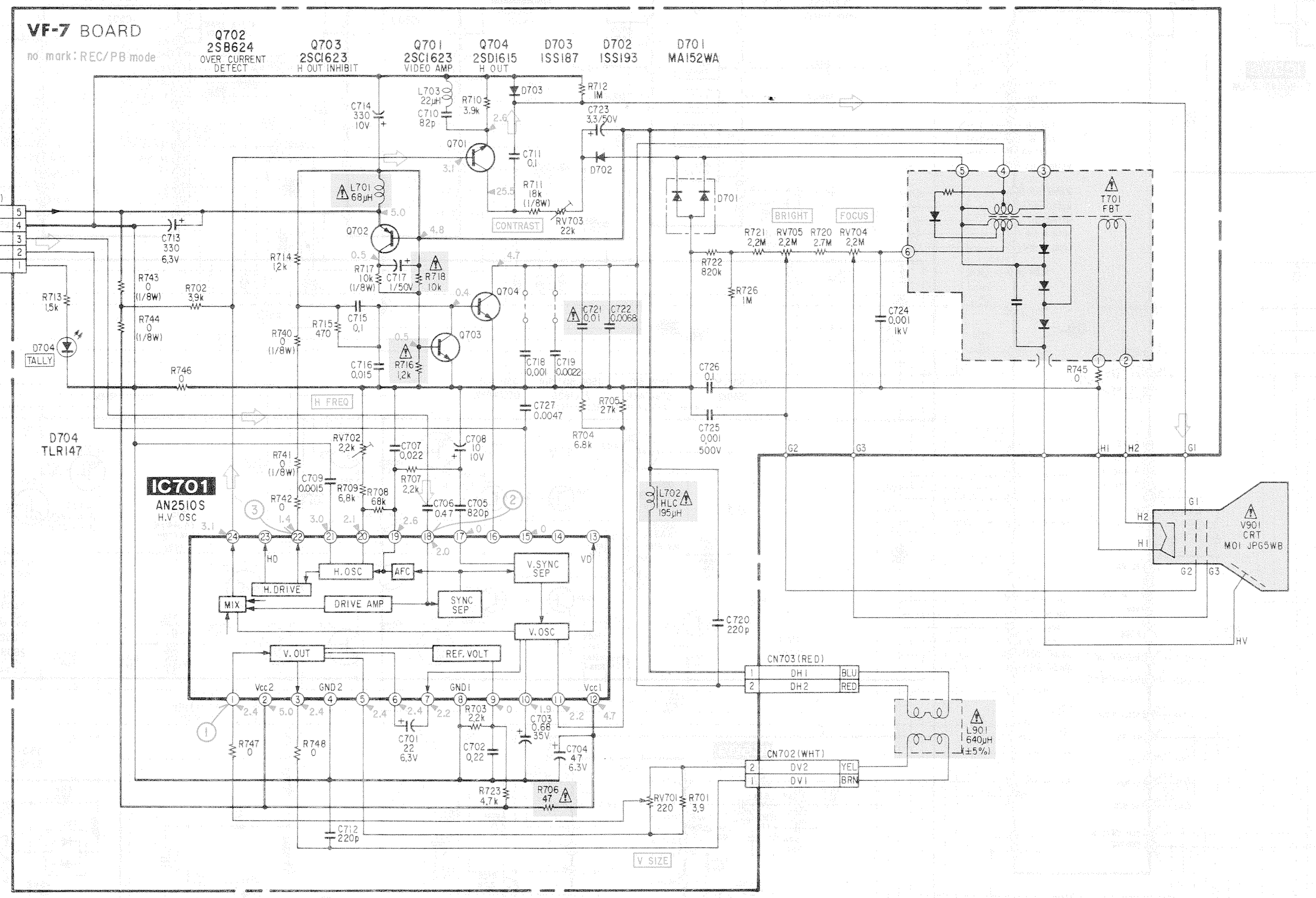
(COMPONENT SIDE)　no mark : REC/PB mode


D704
C701
C703
C704
V901 CRT M01JPG5WB
G1
H2
H1
G2
G3
C708
RV702
RV703
C723
CN703
C717
L702
C714
C725 0.001 500V
RV705
RV704
C724 0.001 1kV
T701 FBT
1-620-156-
14

(SOLDER SIDE)　no mark : REC/PB mode


R717 10k
Q703
R745 0
R715
R718
R716
C726 0.1
R740 0
R720 220P
R714 1.2k
C715 0.1
C716 0.015
R720 2.7M
D702
D701
Q704
C718 0.001
C719 0.0022
C721
C722 0.0068
R722 820K
R726 1M
R721 2.2M
Q701
R709 6.8k
R708 68k
C727 0.0047
IC701
C702 0.22
R703 2.2k
R705 27k
R704 6.8k
R746 0
1-620-156-
14
2
3
4
5
6


VF-7 BOARD
no mark : REC/PB mode
Q702 2SB624 OVER CURRENT DETECT
Q703 2SC1623 H.OUT INHIBIT
Q701 2SC1623 VIDEO AMP
Q704 2SD1615 H.OUT
D703 1SS187
D702 1SS193
D701 MA152WA
CN701(WHT)
EVF 5V
GND
VF OUT
IRIS IND
TALLY
D704 TLR147
TALLY
IC701 AN2510S H.V OSC
H.OSC
AFC
H.DRIVE
MIX
DRIVE AMP
SYNC SEP
V.SYNC SEP
V.OSC
V.OUT
REF.VOLT
CONTRAST
BRIGHT
FOCUS
H FREQ
V SIZE
T701 FBT
L702 HLC 195μH
L901 640μH (±5%)
V901 CRT M01JPG5WB
CN703(RED)
DH1
DH2
CN702(WHT)
DV2
DV1
HV

● Signal path

⇨ :PB Y SIGNAL

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F : nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS COILS

- MF : μF, PF : μμF
- MMH : mH, UH : μH

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
	A-7060-430-A	SS-64 BOARD, COMPLETE ***********************		
	2-279-715-21	RIVET, NYLON		
	*3-712-397-01	PLATE, GROUND, TOP		
	3-712-398-01	REINFORCEMENT (31)		
		CAPACITOR		
C301	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C302	1-163-103-00	CERAMIC CHIP 27PF	5%	50V
C303	1-163-103-00	CERAMIC CHIP 27PF	5%	50V
C304	1-124-234-00	ELECT 22MF	20%	16V
C305	1-124-222-00	ELECT 22MF	20%	6.3V
C306	1-124-233-00	ELECT 10MF	20%	10V
C307	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C308	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C309	1-135-099-00	TANTAL. CHIP 2.2MF	20%	6.3V
C311	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C312	1-163-103-00	CERAMIC CHIP 27PF	5%	50V
C313	1-163-103-00	CERAMIC CHIP 27PF	5%	50V
C314	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C315	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C316	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C318	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C322	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C323	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C325	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C327	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C329	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C330	1-163-034-00	CERAMIC CHIP 0.033MF	10%	25V
C331	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C332	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C335	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C336	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C337	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C501	1-124-222-00	ELECT 22MF	20%	6.3V
C502	1-124-257-00	ELECT 2.2MF	20%	35V
C503	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C504	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C505	1-124-233-00	ELECT 10MF	20%	6.3V
C506	1-163-020-00	CERAMIC CHIP 0.0082MF	10%	50V
C507	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C508	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C509	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C510	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C511	1-124-499-11	ELECT 1MF	20%	50V
C514	1-126-099-11	ELECT 2.2MF	20%	35V
C516	1-126-100-11	ELECT 10MF	20%	6.3V
C518	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C519	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C520	1-130-487-00	MYLAR 0.022MF	5%	50V
C524	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C525	1-126-099-11	ELECT 2.2MF	20%	35V
C526	1-163-075-00	CERAMIC CHIP 0.047MF	10%	25V
C527	1-124-499-11	ELECT 1MF	20%	50V
C529	1-124-499-11	ELECT 1MF	20%	50V
C531	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V
C532	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C533	1-124-233-00	ELECT 10MF	20%	10V
C534	1-163-077-00	CERAMIC CHIP 0.1MF	10%	25V
C535	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C536	1-163-137-00	CERAMIC CHIP 680PF	5%	50V
C537	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C540	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C541	1-126-099-11	ELECT 2.2MF	20%	35V
C543	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C544	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C545	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C546	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C547	1-163-139-00	CERAMIC CHIP 820PF	5%	50V
C548	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C549	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C550	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C553	1-124-222-00	ELECT 22MF	20%	6.3V
C554	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C555	1-127-487-00	ELECT (SOLID)4.7MF	20%	10V
C556	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C557	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C558	1-124-258-00	ELECT 3.3MF	20%	25V
C559	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C560	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C563	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C564	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C651	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C652	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V
C653	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C654	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C655	1-163-034-00	CERAMIC CHIP 0.033MF	10%	25V
C656	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C657	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C658	1-124-233-00	ELECT 10MF	20%	6.3V
C659	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C660	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C661	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C662	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C663	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C664	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C665	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C666	1-163-034-00	CERAMIC CHIP 0.033MF	10%	25V
C667	1-163-034-00	CERAMIC CHIP 0.033MF	10%	25V
C669	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C670	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C672	1-163-033-00	CERAMIC CHIP 0.022MF		50V

Ref.No	Part No.	Description	Remark
		CONNECTOR	
CN301	*1-564-029-00	PIN, CONNECTOR 4P	
CN302	*1-564-013-00	PIN, CONNECTOR 3P	
CN303	*1-564-013-00	PIN, CONNECTOR 3P	
CN304	*1-564-012-00	PIN, CONNECTOR 2P	
CN305	*1-564-014-00	PIN, CONNECTOR 4P	
CN306	*1-564-012-00	PIN, CONNECTOR 2P	
CN307	*1-562-887-11	CONNECTOR, F.P.C 20P	
CN308	*1-564-020-00	PIN, CONNECTOR 10P	
CN309	1-563-492-11	CONNECTOR, F.P.C 19P	
CN310	*1-564-014-00	PIN, CONNECTOR 4P	
CN311	*1-564-003-00	PIN, CONNECTOR 4P	
CN313	*1-564-016-00	PIN, CONNECTOR 6P	
CN314	*1-564-012-00	PIN, CONNECTOR 2P	
CN501	1-563-492-11	CONNECTOR, F.P.C 19P	
CN504	*1-564-014-00	PIN, CONNECTOR 4P	
		DIODE	
D301	8-719-100-03	DIODE 1S2835	
D303	8-719-914-11	DIODE HZ4ALL	
D304	8-719-914-11	DIODE HZ4ALL	
D305	8-719-100-03	DIODE 1S2835	
D501	8-719-101-23	DIODE 1SS123	
D503	8-719-101-23	DIODE 1SS123	
D505	8-719-801-41	DIODE 1SS196	
D651	8-719-801-41	DIODE 1SS196	
		FILTER	
FL501	1-235-612-11	BPF (16KHz)	
FL502	1-235-611-11	BPF (46KHz)	
		IC	
IC301	8-752-801-34	IC CXP5048H-044Q	
IC302	8-752-801-51	IC CXP5048H-050Q	
IC303	8-759-925-43	IC MSM6411B-26GS-VK	
IC304	8-759-100-93	IC UPC393G2	
IC305⚠	8-759-922-54	IC S-81250AG	
IC306	8-759-913-41	IC S-8054ALB	
IC307	8-759-100-92	IC UPC4250G2	
IC501	8-759-107-68	IC CX20115A	
IC502	8-752-003-50	IC CX20035	
IC504	8-759-100-95	IC UPC324G2	
IC505	8-759-925-66	IC BA6303F	
IC506	8-759-201-01	IC TC4066BF	
IC507	8-759-201-00	IC TC4052BF	
IC508	8-759-201-80	IC TC4526BF	
IC509	8-759-928-56	IC CXA1042M	
IC651	8-759-100-93	IC UPC393G2	
		COIL	
L301	1-408-987-21	MICRO INDUCTOR 330UH	
L302	1-408-795-21	INDUCTOR CHIP 330UH	
L303	1-408-795-21	INDUCTOR CHIP 330UH	
L304 ⚠	1-410-389-21	INDUCTOR CHIP 47UH	
L501	1-407-165-XX	MICRO INDUCTOR 47UH	
L502	1-408-795-21	INDUCTOR CHIP 330UH	
L503	1-408-948-00	INDUCTOR CHIP 220UH	
		IC LINK	
PS301⚠	1-532-605-11	LINK, IC (ICP-N10)	
		TRANSISTOR	
Q301	8-729-900-98	TRANSISTOR DTC143TK	
Q302	8-729-900-98	TRANSISTOR DTC143TK	
Q303	8-729-900-98	TRANSISTOR DTC143TK	
Q304	8-729-900-06	TRANSISTOR DTA144EK	
Q305	8-729-900-06	TRANSISTOR DTA144EK	
Q306	8-729-900-06	TRANSISTOR DTA144EK	
Q307	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q308	8-729-901-01	TRANSISTOR DTC144EK	
Q309	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q310	8-729-901-01	TRANSISTOR DTC144EK	
Q311	8-729-900-98	TRANSISTOR DTC143TK	
Q312	8-729-901-06	TRANSISTOR DTA144EK	
Q313	8-729-900-98	TRANSISTOR DTC143TK	
Q314	8-729-901-06	TRANSISTOR DTA144EK	
Q315	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q316	8-729-100-76	TRANSISTOR 2SA812	
Q317 ⚠	8-729-105-29	TRANSISTOR 2SA1385	
Q318	8-729-901-06	TRANSISTOR DTA144EK	
Q319	8-729-901-06	TRANSISTOR DTA144EK	
Q320	8-729-901-01	TRANSISTOR DTC144EK	
Q321	8-729-901-01	TRANSISTOR DTC144EK	
Q322	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q323	8-729-100-76	TRANSISTOR 2SA812	
Q324	8-729-901-06	TRANSISTOR DTA144EK	
Q325	8-729-901-01	TRANSISTOR DTC144EK	
Q326	8-729-901-01	TRANSISTOR DTC144EK	
Q329	8-729-901-01	TRANSISTOR DTC144EK	
Q331	8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q332	8-729-901-06	TRANSISTOR DTA144EK	
Q333	8-729-901-01	TRANSISTOR DTC144EK	
Q501	8-729-100-76	TRANSISTOR 2SA812	
Q502	8-729-102-72	TRANSISTOR 2SA812	
Q503	8-729-901-04	TRANSISTOR DTA114EK	
Q504	8-729-100-76	TRANSISTOR 2SA812	
Q505	8-729-100-76	TRANSISTOR 2SA812	
Q506	8-729-100-66	TRANSISTOR 2SC1623	
Q507	8-729-100-66	TRANSISTOR 2SC1623	
Q508	8-729-901-06	TRANSISTOR DTA144EK	
Q509	8-729-100-76	TRANSISTOR 2SA812	
Q510	8-729-901-06	TRANSISTOR DTA144EK	
Q511	8-729-901-01	TRANSISTOR DTC144EK	
Q512	8-729-901-01	TRANSISTOR DTC144EK	
Q513	8-729-901-01	TRANSISTOR DTC144EK	
Q514	8-729-100-66	TRANSISTOR 2SC1623	
Q515	8-729-903-29	TRANSISTOR DTA144TK	
Q516	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q517	8-729-100-76	TRANSISTOR 2SA812	
Q518	8-729-100-67	TRANSISTOR 2SC1623-L7	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
Q519	8-729-100-76	TRANSISTOR 2SA812	
Q520	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q521	8-729-199-92	TRANSISTOR 2SD999	
Q522	8-729-199-92	TRANSISTOR 2SD999	
Q523	8-729-901-06	TRANSISTOR DTA144EK	
Q524	8-729-901-01	TRANSISTOR DTC144EK	
Q525	8-729-901-06	TRANSISTOR DTA144EK	
Q651	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q652	8-729-100-76	TRANSISTOR 2SA812	
Q653	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q654	8-729-100-76	TRANSISTOR 2SA812	
Q655	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q656	8-729-100-76	TRANSISTOR 2SA812	
Q657	8-729-901-06	TRANSISTOR DTA144EK	

RESISTOR

Ref.No	Part No.	Description				Remark
R301	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R302	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R303	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R304	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R305	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R306	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R307	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R308	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R309	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R310	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R311	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R312	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R313	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R314	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R315	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R316	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R317	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R318	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R319	1-216-041-00	METAL CHIP	470	5%	1/10W	
R320	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R321	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R322	1-216-045-00	METAL CHIP	680	5%	1/10W	
R323	1-216-194-00	METAL CHIP	680	5%	1/8W	
R324	1-216-194-00	METAL CHIP	680	5%	1/8W	
R325	1-216-194-00	METAL CHIP	680	5%	1/8W	
R326	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R327	1-216-123-11	METAL CHIP	1.2M	5%	1/10W	
R328	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R329	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R330	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R331	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R332	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R333	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R334	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R335	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R336	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R337	1-216-047-00	METAL CHIP	820	5%	1/10W	
R338	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R339	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R340	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R341	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R342	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R343	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R344	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R345	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R346	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R347	1-216-129-00	METAL CHIP	2.2M	5%	1/10W	
R348	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R349	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R350	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R351	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R353	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R354	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R355	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R356	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R357	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R359	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R360	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R361	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R362	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R363	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R364	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R365	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R366	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R367	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R368	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R369	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R370	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R371	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R372	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R375	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R376	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R377	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R378	1-216-174-00	METAL CHIP	100	5%	1/8W	
R379	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R380	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R383	1-216-295-00	METAL CHIP	0	5%	1/10W	
R385	1-216-295-00	METAL CHIP	0	5%	1/10W	
R387	1-216-295-00	METAL CHIP	0	5%	1/10W	
R389	1-216-295-00	METAL CHIP	0	5%	1/10W	
R390	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R391	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R392	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R393	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R394	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R395	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R396	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R397	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R501	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R502	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R503	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R504	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R505	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R506	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R507	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R508	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R509	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R510	1-216-093-00	METAL CHIP	68K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R511	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R512	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R513	1-216-295-00	METAL CHIP 0 5% 1/10W	
R514	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R516	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R517	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R518	1-216-117-00	METAL CHIP 680K 5% 1/10W	
R519	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R520	1-216-06-00	METAL CHIP 5.6K 5% 1/10W	
R521	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R522	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R523	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R524	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R525	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R526	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R527	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R528	1-216-182-00	METAL CHIP 220 5% 1/8W	
R530	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R531	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R534	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R535	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R536	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R537	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R538	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R539	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R540	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R541	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R542	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R543	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R544	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R545	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R546	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R547	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R548	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R549	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R550	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R551	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R552	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R553	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R554	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R555	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R556	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R557	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R557	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R558	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R559	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R560	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R561	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R563	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R564	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R565	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R566	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R567	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R568	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	

Ref.No	Part No.	Description	Remark
R569	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R570	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R571	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R572	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R573	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R574	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R575	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R576	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R577	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R578	1-216-047-00	METAL CHIP 820 5% 1/10W	
R579	1-216-117-00	METAL CHIP 680K 5% 1/10W	
R580	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R581	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R583	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R584	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R585	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R586	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R587	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R589	1-216-295-00	METAL CHIP 0 5% 1/10W	
R590	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R591	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R593	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R595	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R596	1-216-119-00	METAL CHIP 820K 5% 1/10W	
R597	1-216-119-00	METAL CHIP 820K 5% 1/10W	
R598	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R651	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R652	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R653	1-216-045-00	METAL CHIP 680 5% 1/10W	
R654	1-216-021-00	METAL CHIP 68 5% 1/10W	
R655	1-216-029-00	METAL CHIP 150 5% 1/10W	
R656	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R657	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R658	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R659	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R660	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R661	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R662	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R663	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R664	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R665	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R666	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R668	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R669	1-216-119-00	METAL CHIP 820K 5% 1/10W	
R670	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R671	1-216-045-00	METAL CHIP 680 5% 1/10W	
R672	1-216-027-00	METAL CHIP 120 5% 1/10W	
R673	1-216-047-00	METAL CHIP 820 5% 1/10W	
R674	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R675	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R676	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R677	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R678	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R679	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R680	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R681	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R682	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R683	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R684	1-216-119-00	METAL CHIP 820K 5% 1/10W	
R685	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R686	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R687	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R688	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R689	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R691	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R696	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R697	1-216-073-00	METAL CHIP 10K 5% 1/10W	
		VARIABLE RESISTOR	
RV301	1-230-867-11	RES, ADJ, METAL GLAZE 1K	
RV501	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
RV502	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
		CRYSTAL	
X301	1-567-346-11	OSCILLATOR, CERAMIC (5MHz)	
X302	1-567-346-11	OSCILLATOR, CERAMIC (5MHz)	
X303	1-567-192-11	OSCILLATOR, CERAMIC (4MHz)	

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A-7060-384-A DR-36 BOARD, COMPLETE
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		CAPACITOR	
C501	1-123-611-00	ELECT 1MF 20% 50V	
C502	1-123-611-00	ELECT 1MF 20% 50V	
C503	1-124-255-00	ELECT 1MF 20% 50V	
C504	1-124-258-00	ELECT 3.3MF 20% 25V	
C505	1-124-255-00	ELECT 1MF 20% 50V	
C506	1-163-035-00	CERAMIC CHIP 0.047MF 10% 25V	
C507	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C508	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C509	1-126-099-11	ELECT 2.2MF 20% 35V	
C511	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C512	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C513	1-124-577-11	ELECT 82MF 20% 10V	
C514	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C515	1-124-577-11	ELECT 82MF 20% 10V	
C516	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C517	1-123-617-00	ELECT 10MF 20% 16V	
C518	1-124-233-00	ELECT 10MF 20% 16V	
C519	1-124-233-00	ELECT 10MF 20% 16V	
C520	1-124-577-11	ELECT 82MF 20% 10V	
C521	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C522	1-124-596-11	ELECT 27MF 20% 16V	
C523	1-124-596-11	ELECT 27MF 20% 16V	
C524	1-124-596-11	ELECT 27MF 20% 16V	
C527	1-163-035-00	CERAMIC CHIP 0.047MF 10% 25V	
C528	1-163-035-00	CERAMIC CHIP 0.047MF 10% 25V	

Ref.No	Part No.	Description	Remark
		CONNECTOR	
CN312	*1-564-012-00	PIN, CONNECTOR 2P	
		DIODE	
D501	8-719-200-35	DIODE E10QS03	
D502	8-719-200-35	DIODE E10QS03	
D503	8-719-200-35	DIODE E10QS03	
		IC	
IC501	8-759-202-45	IC CX20114	
IC502	8-752-003-60	IC CX20036	
		COIL	
L501	1-410-628-11	COIL, CHOKE 200UH	
L502	1-410-628-11	COIL, CHOKE 200UH	
L503	1-410-628-11	COIL, CHOKE 200UH	
		TRANSISTOR	
Q501	8-729-100-76	TRANSISTOR 2SA812	
Q502	8-729-901-01	TRANSISTOR DTC144EK	
Q503	8-729-100-76	TRANSISTOR 2SA812	
Q504	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q505	⚠8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q506	8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q507	8-729-700-10	NJL7141E-S	
		RESISTOR	
R501	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R502	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R503	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R504	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R505	1-216-047-00	METAL CHIP 820 5% 1/10W	
R506	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R507	1-216-025-00	METAL CHIP 100 5% 1/10W	
R508	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R509	1-216-041-00	METAL CHIP 470 5% 1/10W	
R510	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R511	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R512	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R513	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R514	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R515	1-216-295-00	METAL CHIP 0 5% 1/10W	
R516	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R517	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R518	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R519	1-216-025-00	METAL CHIP 100 5% 1/10W	
R520	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R521	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R522	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R523	1-214-972-00	METAL 0.22 5% 1/4W	
R524	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R525	1-216-041-00	METAL CHIP 470 5% 1/10W	
R526	1-216-041-00	METAL CHIP 470 5% 1/10W	
R527	1-216-304-11	METAL CHIP 3.3 5% 1/10W	
R528	1-216-304-11	METAL CHIP 3.3 5% 1/10W	
R529	1-216-304-11	METAL CHIP 3.3 5% 1/10W	
R530	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R532	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R534	1-216-295-00	METAL CHIP 0 5% 1/10W	

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A-7060-541-A TS-55 BOARD, COMPLETE
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*X-3686-836-1 HOLDER ASSY, TOP

CONNECTOR

Ref.No	Part No.	Description	Remark
CN506	*1-562-887-11	CONNECTOR, F.P.C 20P	
CN507	*1-564-018-11	PIN, CONNECTOR 8P	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q501	8-729-700-10	NJL7141E-S	

RESISTOR

Ref.No	Part No.	Description	Remark
R501	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R502	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R505	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R506	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R507	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R508	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R509	1-216-295-00	METAL CHIP 0 5% 1/10W	
R511	1-216-295-00	METAL CHIP 0 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV501	1-230-526-11	RES, ADJ, METAL GLAZE 47K	
RV502	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV503	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV504	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV506	1-230-526-11	RES, ADJ, METAL GLAZE 47K	
RV507	1-230-528-11	RES, ADJ, METAL GLAZE 220K	
RV508	1-230-529-11	RES, ADJ, METAL GLAZE 470K	

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*A-7060-573-A AI-1 BOARD, COMPLETE
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CAPACITOR

Ref.No	Part No.	Description	Remark
C781	1-124-224-00	ELECT 47MF 20% 6.3V	
C782	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
C783	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
C784	1-163-081-00	CERAMIC CHIP 0.22MF 25V	
C785	1-124-222-00	ELECT 22MF 20% 6.3V	
C786	1-124-222-00	ELECT 22MF 20% 6.3V	
C787	1-124-222-00	ELECT 22MF 20% 6.3V	
C789	1-124-236-00	ELECT 47MF 20% 10V	
C790	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C791	1-124-236-00	ELECT 47MF 20% 10V	
C792	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
C793	1-124-255-00	ELECT 1MF 20% 50V	
C794	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C795	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
C797	1-131-383-00	TANTALUM 10MF 10% 6.3V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN781	*1-564-007-00	PIN, CONNECTOR 8P	
CN782	*1-564-003-00	PIN, CONNECTOR 4P	

DIODE

Ref.No	Part No.	Description	Remark
D781	8-719-801-48	DIODE 1SS193	
D782	8-719-801-48	DIODE 1SS193	
D783	8-719-801-48	DIODE 1SS193	
D784	8-719-801-48	DIODE 1SS193	
D785	8-719-101-23	DIODE 1SS123	
D786	8-719-101-23	DIODE 1SS123	
D789	8-719-801-48	DIODE 1SS193	

IC

Ref.No	Part No.	Description	Remark
IC781	8-759-100-95	IC UPC324G2	
IC782	8-759-100-95	IC UPC324G2	
IC783	8-759-103-25	IC UPD4053BG	
IC784	8-759-103-03	IC UPD6107G	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q781	8-729-100-76	TRANSISTOR 2SA812	
Q782	8-729-100-66	TRANSISTOR 2SC1623	
Q783	8-729-100-76	TRANSISTOR 2SA812	
Q784	8-729-100-66	TRANSISTOR 2SC1623	
Q785	8-729-100-66	TRANSISTOR 2SC1623	
Q786	8-729-100-76	TRANSISTOR 2SA812	
Q787	8-729-100-76	TRANSISTOR 2SA812	
Q788	8-729-100-66	TRANSISTOR 2SC1623	
Q789	8-729-100-76	TRANSISTOR 2SA812	
Q790	8-729-901-01	TRANSISTOR DTC144EK	
Q791	8-729-100-66	TRANSISTOR 2SC1623	
Q792	8-729-100-76	TRANSISTOR 2SA812	
Q793	8-729-100-76	TRANSISTOR 2SA812	

RESISTOR

Ref.No	Part No.	Description	Remark
R781	1-216-107-00	METAL CHIP 270K 5% 1/10W	
R782	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R783	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R784	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R785	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R786	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R787	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	

When indicating parts by reference number, please include the board name.

AI-1 CG-1

Ref.No	Part No.	Description				Remark
R788	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R789	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R790	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R791	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R792	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R793	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R794	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R795	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R796	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R797	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R798	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R799	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R800	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R801	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R802	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R803	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R804	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R805	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R806	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R809	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R810	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R811	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R812	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R813	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R814	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R815	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R816	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R817	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R818	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R819	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R820	1-216-041-00	METAL CHIP	470	5%	1/10W	
R821	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R822	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R823	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R824	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R825	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R826	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R827	1-216-011-00	METAL CHIP	27	5%	1/10W	
R828	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R829	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R830	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R831	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R832	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R833	1-216-021-00	METAL CHIP	68	5%	1/10W	
R834	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R835	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R836	1-216-025-00	METAL CHIP	100	5%	1/10W	
R837	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R838	1-216-049-00	METAL CHIP	1K	5%	1/10W	

VARIABLE RESISTOR

RV781	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K
RV782	1-230-871-21	RES, ADJ, METAL GLAZE 22K

Ref.No	Part No.	Description				Remark
	*A-7060-575-A	CG-1 BOARD, COMPLETE **********************				
	3-573-141-00	WASHER (B), THRUST				
	3-712-106-01	REINFORCEMENT (333)				

CAPACITOR

C671	1-124-222-00	ELECT	22MF	20%	6.3V
C673	1-131-375-00	TANTALUM	4.7MF	10%	10V
C674	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C675	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C676	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C677	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C678	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C679	1-163-117-00	CERAMIC CHIP	100P	5%	50V

CONNECTOR

CN671	*1-564-008-61	PIN, CONNECTOR 9P
CN672	*1-564-006-51	PIN, CONNECTOR 7P

TRIMMER

CT671	1-141-331-11	CAP, VAR, TRIMMER (CHIP)

IC

IC671	8-759-106-63	IC UPD74HC02G
IC672	8-759-106-89	IC UPD74HC157G
IC673	8-759-204-96	IC UPD74HC04G
IC675	8-759-107-89	IC UPD6105G-102
IC676	8-759-107-89	IC UPD6105G-102
IC677	8-759-106-96	IC UPD74HC174G
IC678	8-759-106-96	IC UPD74HC174G

COIL

L671	1-408-970-21	MICRO INDUCTOR 10UH
L672	1-407-166-XX	MICRO INDUCTOR 56UH

TRANSISTOR

Q671	8-729-901-06	TRANSISTOR DTA144EK
Q672	8-729-100-66	TRANSISTOR 2SC1623

RESISTOR

R671	1-216-097-00	METAL CHIP	100K	5%	1/10W
R672	1-216-097-00	METAL CHIP	100K	5%	1/10W
R673	1-216-295-00	METAL CHIP	0	5%	1/10W
R674	1-216-031-00	METAL CHIP	180	5%	1/10W
R675	1-216-054-00	METAL CHIP	1.6K	5%	1/10W
R676	1-216-073-00	METAL CHIP	10K	5%	1/10W
R677	1-216-062-00	METAL CHIP	3.6K	5%	1/10W
R678	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R679	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R680	1-216-062-00	METAL CHIP	3.6K	5%	1/10W
R681	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R682	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R683	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R684	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R685	1-216-295-00	METAL CHIP	0	5%	1/10W
R686	1-216-049-00	METAL CHIP	1K	5%	1/10W
R687	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R688	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R689	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R690	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R697	1-211-451-00	CARBON 1K 5% 1/8W	F
R697	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R699	1-216-295-00	METAL CHIP 0 5% 1/10W	

VARIABLE RESISTOR

RV671	1-230-226-00	RES, VAR, CARBON 10K(IRIS)	

SWITCH

S671	1-553-977-00	SWITCH, SLIDE(FOCUS)	
S672	1-554-945-12	SWITCH, SLIDE(WHITE BALANCE)	
S673	1-553-977-00	SWITCH, SLIDE(SENS)	
S674	1-554-364-00	SWITCH, SLIDE(CAMERA POWER SW)	

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*1-620-154-14 TI-8 BOARD

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	1-554-371-31	SWITCH, TACT	

DIODE

D691	8-719-918-66	DIODE GL-1HY102	
D692	8-719-918-67	DIODE GL-1EG102	
D693	8-719-100-05	DIODE 1S2837	
D694	8-719-100-05	DIODE 1S2837	
D695	8-719-100-05	DIODE 1S2837	

TRANSISTOR

Q691	8-729-903-29	TRANSISTOR DTA144TK	

RESISTOR

R691	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R692	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R693	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R694	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R695	1-216-295-00	METAL CHIP 0 5% 1/10W	
R696	1-216-295-00	METAL CHIP 0 5% 1/10W	

SWITCH

S691	1-554-371-31	SWITCH, TACT (PUSH AUTO)	
S692	1-554-371-31	SWITCH, TACT (MAIN)	
S693	1-554-371-31	SWITCH, TACT (SUB)	
S694	1-554-371-31	SWITCH, TACT (DATE)	
S695	1-554-371-31	SWITCH, TACT (TIME)	
S696	1-554-371-31	SWITCH, TACT (FADER/WIPER)	
S697	1-554-371-31	SWITCH, TACT (REC REVIEW)	

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A-7060-578-A VF-7 BOARD, COMPLETE

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	1-526-926-11	SOCKET ASSY, CRT	
	*3-662-075-00	COVER, CONTROL	
	*3-712-665-01	HOLDER, LED	

Ref.No	Part No.	Description	Remark

CAPACITOR

C701	1-123-618-00	ELECT 22MF 20%	6.3V
C702	1-163-081-00	CERAMIC CHIP 0.22MF	25V
C703	1-131-346-00	TANTALUM 0.68MF 10%	35V
C704	1-124-224-00	ELECT 47MF 20%	6.3V
C705	1-163-139-00	CERAMIC CHIP 820PF 10%	50V
C706	1-162-637-00	CERAMIC CHIP 0.47MF	16V
C707	1-163-033-00	CERAMIC CHIP 0.022MF 10%	25V
C708	1-123-617-00	ELECT 10MF 20%	16V
C709	1-163-209-00	CERAMIC CHIP 0.0015MF 5%	50V
C710	1-163-115-00	CERAMIC CHIP 82PF 5%	50V
C711	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C712	1-163-125-00	CERAMIC CHIP 220PF 10%	50V
C713	1-124-442-00	ELECT 330MF 20%	6.3V
C714	1-124-604-00	ELECT 330MF 20%	10V
C715	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C716	1-163-023-00	CERAMIC CHIP 0.015MF 10%	50V
C717	1-123-611-00	ELECT 1MF 20%	50V
C718	1-163-141-00	CERAMIC CHIP 0.001MF 10%	50V
C719	1-163-013-00	CERAMIC CHIP 0.0022MF 10%	50V
C720	1-163-189-00	CERAMIC CHIP 220PF 10%	50V
C721	⚠1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C722	⚠1-163-019-00	CERAMIC CHIP 0.0068MF 10%	50V
C723	1-123-613-00	ELECT 3.3MF 20%	50V
C724	1-162-146-00	CERAMIC 0.001MF	1KV
C725	1-102-038-00	CERAMIC 0.001MF 99%	500V
C726	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C727	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V

CONNECTOR

CN701	*1-564-004-00	PIN, CONNECTOR 5P	
CN702	*1-564-001-11	PIN, CONNECTOR 2P	
CN703	*1-564-001-11	PIN, CONNECTOR 2P	

DIODE

D701	8-719-400-20	DIODE MA152WA	
D702	8-719-801-48	DIODE 1SS193	
D703	8-719-801-45	DIODE 1SS187	
D704	8-719-800-24	DIODE TLR147	

IC

IC701	8-759-403-49	IC AN2510S	

COIL

L701	⚠1-408-980-41	MICRO INDUCTOR 68UH	
L702	⚠1-459-683-11	COIL, FERRITE (HLC)	
L703	1-407-161-XX	MICRO INDUCTOR 22UH	

TRANSISTOR

Q701	8-729-100-66	TRANSISTOR 2SC1623	
Q702	8-729-162-44	TRANSISTOR 2SB624-BV4	
Q703	8-729-100-67	TRANSISTOR 2SC1623-L7	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part numer specified.

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When indicating parts by reference number, please include the board name.

VF-7

Ref.No	Part No.	Description	Remark
Q704	8-729-106-64	TRANSISTOR 2SD1615	
		RESISTOR	
R701	1-216-306-11	METAL CHIP 3.9 5% 1/10W	
R702	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R703	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R704	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R705	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R706	⚠1-216-017-00	METAL CHIP 47 5% 1/10W	
R707	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R708	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R709	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R710	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R711	1-216-228-00	METAL CHIP 18K 5% 1/8W	
R712	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R713	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R714	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R715	1-216-041-00	METAL CHIP 470 5% 1/10W	
R716	⚠1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R717	1-216-222-00	METAL CHIP 10K 5% 1/8W	
R718	⚠1-216-073-00	METAL CHIP 10K 5% 1/10W	
R720	1-216-131-11	METAL CHIP 2.7M 5% 1/10W	
R721	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R722	1-216-119-00	METAL CHIP 820K 5% 1/10W	
R723	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R726	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R740	1-216-296-00	METAL CHIP 0 5% 1/8W	
R741	1-216-296-00	METAL CHIP 0 5% 1/8W	
R742	1-216-295-00	METAL CHIP 0 5% 1/10W	
R743	1-216-296-00	METAL CHIP 0 5% 1/8W	
R744	1-216-296-00	METAL CHIP 0 5% 1/8W	
R745	1-216-296-00	METAL CHIP 0 5% 1/8W	
R746	1-216-295-00	METAL CHIP 0 5% 1/10W	
R747	1-216-295-00	METAL CHIP 0 5% 1/10W	
R748	1-216-295-00	METAL CHIP 0 5% 1/10W	
		VARIABLE RESISTOR	
RV701	1-226-925-00	RES, ADJ, SOLID 220	
RV702	1-226-708-00	RES, ADJ, SOLID 2.2K	
RV703	1-226-711-00	RES, ADJ, SOLID 22K	
RV704	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M	
RV705	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M	
		TRANSFORMER	
T701	⚠1-439-394-11	TRANSFORMER ASSY, FLYBACK	

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When indicating parts by reference number, please include the board name.